University of Alberta

Roman Healing Spas in Italy: A Study in Design and Function

by

Tana Joy Allen ©

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Abstract

A spa is defined as a bathing establishment which used thermal-mineral spring water for therapeutic purposes. Although the topics of bathing and medicine in the Roman world have received considerable attention, thermal-mineral spas have remained inadequately studied. Recent research acknowledges the importance of spas, but generally excludes any detailed discussion of the institution. More than thirty spas are known to have existed in Italy alone together with over a hundred more throughout the Roman provinces. Knowledge of many of these is preserved only in the literary record. Further information about other sites has also been brought to light through inscriptions and archaeological investigation. By using a wide range of evidence, including ancient literary sources, inscriptions, and archaeological material, I have provided a clarification of the nature of Roman healing spas in their original context.

In the introduction, I provide a definition of a spa and relevant archaeological background. Because of the importance springs had as the most critical feature of spa, the first chapter sets out the information known about the use of thermal-mineral springs. The second chapter discusses the origins of spa bathing. Chapter three focuses entirely on the setting and architecture of spas. One of the difficulties encountered in a study of spas is distinguishing a healing establishment from ordinary bathing complexes. A close analysis of the design of spas makes this possible. The fourth chapter discusses the interpretation of Baiae and its function as a place of healing. Both the literary evidence and the archaeological evidence illustrate Baiae's curative potential. Chapter five highlights the various methods available for using the waters. Chapters six and seven are

concerned especially with social historical issues: clientele, ownership, and economics. The eighth chapter appraises the cult activity at healing spas.

Thermal-mineral spas were an important aspect of Roman medicine and society. They comprised only one of several choices of medical treatement for Romans. Yet, the many frequent references to the curative powers of spas in the texts and the many elaborately built establishments suggests that spas were regarded highly for their ability to restore health.

Table of Contents

Introduction 1

Previous Spa Bathing Scholarship 1

Purpose of the Current Study 4

Literary Evidence 5

Epigraphic Evidence 6

The Peutinger Table 7

Archaeological Background 9

Definition of a Spa 14

Chapter 1. Thermal-Mineral Springs 16

Terminology of Springs 17

Roman Explanations for the Origins of Springs 19

Roman Classifications of Thermal-Mineral Springs 25

Curative Properties of Thermal-Mineral Springs 31

Chapter 2. Early Development and Distribution of Spas 36

The Earliest Development of Spas in Italy 37

The Role of Spa Bathing in Roman Medicine 40

Distribution of Spas 45

Chapter 3. The Archaeology and Setting of Spas 47

Setting and Surroundings 49

Transport of Thermal-Mineral Water 51

Baths with Thermal-Mineral Springs in Close Proximity 54

Architectural Features 56

Rooms for immersion and/or swimming 56

Rooms designed for sweating 69

Addition of artificially heated elements 75

General Design Considerations 79

Chapter 4. The Archaeology of Baiae 82

Southern Baths 83

Hadrianic Building 87

Thermae of Sosandra 88

Baths of Mercury 90

Baths of Venus 92

Baths of Diana 93

Baths of Apollo 94

Stufe di Nerone 95

Other Baths 95

Observations 97

Chapter 5. Applications of Thermal-Mineral Water 102

Terminology of Spa Bathing Activity 103

Immersion Bathing 106

Standing, Sitting, and Showering 107

Swimming 108

Drinking 109

Rinsing 111

Steam-Bathing 112

Unspecified Applications 112

Archaeological Corroboration of Methods of Water Use 114

Chapter 6. The Clientele at Spas 118

Part One 119

Baiae as a Healing Resort for Emperors 119

The Emperors at Spas Other than Baiae 122

The Upper Classes at Baiae and the Surrounding Area 126

The Upper Classes at Spas Other than Baiae 131

Part Two 133

The Inscriptions 133

The *Familia Caesaris* 135

Roman Citizens 141

Military Personnel 143

Probable *Ingenui* 146

Freedmen 150

Medical Professionals 152

Slaves 154

General Observations on Gender and Status 155

Chapter 7. The Economics of Spas 159

Imperial Contributions to Spas 160

Civic Involvment 162

Private Ownership of Springs and Spas 165

Ownership of Springs at Baiae 165

The Evidence from the Poems of Florus in the *Anthologia Latina* . 168

Expenses of Operation and Construction 172

Expenses to Visitors 172

Chapter 8. Religious Activity at Spas 176

Gifts to the Gods 177

Pre-Roman Votive Offerings 177

Anatomical Votives 178

Roman Votives 181

Statuary from Spas 183

Written Evidence 192

Inscriptions 192

Literary Texts 196

General Observations 200

Conclusion . . . 201

Catalogue of Spas in Italy . . . 206

Map - Distribution of Spas . . . 213

Figures . . . 214

Bibliography . . . 253

Appendix 1. Inscriptions from or about Spas . . . 270

Appendix 2. Spas on the Peutinger Table . . . 278

Appendix 3. Analysis of the Belief in the Power of Sulpur Springs . . . 280

Appendix 4. Text and Translation of Cassiodorus', *Var.* 9.6 . . . 282

Appendix 5. Principal Literary Citations for Healing Spas and Mineral Springs . . . 287

List of Figures

Fig. 1 Acqui (Aquae Statiellae)
(plan from Mazzini)

Fig. 2 Agnano
(plan from Amalfitano)

Fig. 3 Aquae Vescinae
(plan after Arthur)

Fig. 4 Aquae Caeretanae
(plan after Cosentino and Tumolesi)

Fig. 5 Baiae, Hillside Complex
(plan after Maiuri)

Fig. 6 Baiae, Baths of Mercury
(plan after Amalfitano)

Fig. 7 Baiae, Baths of Venus
(plan from Amalfitano)

Fig. 8 Baiae, Southern Baths - Bath 1
(plan after Amalfitano)

Fig. 9 Baiae, Southern Baths - Bath 2
(plan after Amalfitano)

Fig. 10 Baiae, Southern Baths - Bath 3, Hadrianic Building, Thermae of Sosandra
(plan after Yegül)

Fig. 11a Montegrotto Terme, large bath complex (Aquae Aponi)
(plan after Lazzaro)

Fig. 11b Montegrotto Terme region, pool fed by "Lastra" spring (Aquae Aponi)
(drawing from *Delle antiche terme di Montegrotto*)

Fig. 12 San Calogero
(plan after Cavalier)

Fig. 13 Teanum Sidicinum
(plan after Gàbrici)

Fig. 14 Terme di Cotilia (Aquae Cutiliae)

(plan after De Palma)

Fig. 15 Terme Taurine (Aquae Tauri)
(plan after Yegül)

Fig. 16 Valchetta Baths
(plan from Jones)

Fig. 17 Aquae Albulae
(plan from Mari)

Fig. 18 Terme Taurine, Room C, facing west
(photo by T. Allen)

Fig. 19 Terme Taurine, Room C, facing east
(photo by T. Allen)

Fig. 20 Terme Taurine, Room W, facing north
(photo by T. Allen)

Fig. 21 Terme Taurine, Room B, facing south
(photo by T. Allen)

Fig. 22 Aquae Cutiliae, large pool, facing east
(photo by T. Allen)

Fig. 23 Aquae Cutiliae, steps and drain, on south pool wall
(photo by T. Allen)

Fig. 24 Peutinger Table, segment IV
(reproduction from Bosio)

Fig. 25 Peutinger Table, segment V
(reproduction from Bosio)

Fig. 26a Peutinger Table, segment VI
(reproduction from Bosio)

Fig. 26b Peutinger Table, segment VII
(reproduction from Bosio)

Fig. 27 Castro Urdiales cup
(reproduction from Jackson)

Fig. 28 Aenaria, votive relief, Apollo and the Nymphs
(photo from Forti)

Fig. 29a Aenaria, votive relief, the Dioscuri and the Nymphs (*CIL* 10.6792)
(photo from Forti)

Fig. 29b Aenaria, votive relief, Apollo and the Nymphs (*CIL* 10.6796)
(photo from Forti)

Fig. 30 Aenaria, votive relief, Apollo and the Nymphs (*CIL* 10.6786)
(photo from Forti)

Fig. 31 Aenaria, votive relief, Apollo and the Nymphs (*CIL* 10.6793)
(photo from Forti)

Fig. 32 Aenaria, votive relief, Apollo and the Nymphs (*IG* 14.892)
(photo from Forti)

Fig. 33 Vicarello, silver goblets
(drawing from Künzl and Künzl)

Fig. 34 Vicarello, Asclepius Head
(photo from Colini)

Fig. 35 Aquae Aponi, feet of Asclepius statue
(drawing from Migliolaro)

Fig. 36 Aquae Aponi, statue of young male
(photo from *Delle antiche terme di Montegrotto*)

Fig. 37 Aquae Aponi, statue of Harpocrates
(drawing from Migliolaro)

Fig. 38 Agnano, head of nymph
(photo from Macchioro)

Fig. 39 Agnano, statue of Venus
(photo from Macchioro)

Fig. 40 Agnano, statue of Hermes
(photo from Macchioro)

Fig. 41 Agnano, statue of Venus armata
(photo from Macchioro)

Fig. 42 Agnano, statue of Ganymede
(photo from Macchioro)

Fig. 43 Teanum Sidicinum, statue of satyr

(photo from Gàbrici)

Fig. 44 Teanum Sidicinum, statue of Eros standing
(photo from Gàbrici)

Fig. 45 Teanum Sidicinum, head fragment of Eros
(photo from Gàbrici)

Fig. 46 Teanum Sidicinum, statue of Venus
(photo from Gàbrici)

Fig. 47 Teanum Sidicinum, head of River God
(photo from Gàbrici)

Fig. 48 Teanum Sidicinum, statue of youth holding goose
(photo from Gàbrici)

Fig. 49 Capitoline Museum, statue of boy holding goose
(photo from Pollitt)

Fig. 50 Naples Museum, statue of Sosandra from Baiae
(photo from *Le Collezioni del Museo Nazionale di Napoli*)

Fig. 51 Naples Museum, head of Apollo from Baiae
(photo from *Le Collezioni del Museo Nazionale di Napoli*)

Fig. 52 Terme Taurine, head of nymph
(photo from Bastianelli)

Fig. 53 Terme Taurine, altar of Alcibiades
(photo by T. Allen)

Fig. 54 Terme Taurine, statue of chiton-wearing figure
(photo from Bastianelli)

Fig. 55 Glass flasks depicting scenes of Baiae
(drawings from Painter)

Abbrevations

AE	*L'Année epigraphique*
ANRW	Temporini, H. and W. Haase, eds. *Aufsteig und Niedergang der römischen Welt* (Berlin, 1972-)
AJA	*American Journal of Archaeology*
AJPh	*American Journal of Philology*
ArchLaz	*Archeologia Laziale*
Boll. d'Arch.	*Bollettino di Archeologia*
CIL	*Corpus Inscriptionum Latinarum*
DE	de Ruggiero, Ettore, ed., *Dizionario Epigrafico* (Rome, 1961-1997)
EAA	Bianchi Bandinelli, R. and G. Pugliese Caratelli, eds. *Enciclopedia dell'arte antica* (Rome, 1958 -)
HTR	*Harvard Theological Review*
IEJ	*Israel Exploration Journal*
Inscr. Ital.	Mancini, Joachim, ed., *Inscriptiones Italiae.* vol. 4 regio 4 fasc. 1 Tibur (Rome, 1952)
ILS	Dessau, H. *Inscriptiones Latinae Selectae.* 3 vols. in 5. Berlin, 1892-1916.
IG	G. Kaibal, ed., *Iscriptiones Siciliae et Italiae* (Rome, 1890)
JRA	*Journal of Roman Archaeology*
LIMC	*Lexicon Iconographicum Mythologiae Classicae*
MEFRA	*Mélanges d l'École Française à Rome: Antiquité*
MonAnt	*Monumenti Antichi*
NSc	*Notizie degli Scavi di Antichità*
OCD	*Oxford Classical Dictionary*, 3rd edition (Oxford, 1996)

PBSR	*Papers of the British School at Rome*
PIR²	*Prosopographia Imperii Romani,* 2nd edition
RAAN	*Rendiconti dell'Accademia di Archeologia, Lettere e Belle Arti-Napoli*
RE	Pauly, A.G. Wissowa and W. Kroll, eds. *Real-Encyclopädie der classischen Altertumswissenschaft* (Stuttgart, 1893 -)
RömMitt *RÖ*	*Mitteilungen des deutschen archäologischen Instituts, Römische Abteilung*
SE	*Studi Etruschi*
SEG	*Supplementum Epigraphicum Graecum*

Introduction

Healing spas formed an important component of health and hygiene in the Roman world. Their early use and development was related to the growing interest in bathing and medicine in the first centuries of the Roman empire. Spas provided a new method for improving health which combined the comforts of the bath with innovative treatments based on rational and logical medicine. Spa bathing had connections with the general trend towards hydrotherapy. As an easily accessible alternative to the harsh remedies sometimes prescribed by doctors or even by folk-cures, the use of hot and cold waters in baths became a popular option for restoring health. The treatments found in spas were aimed at specific needs and focused especially on the thermal-mineral springs. At a spa, a visitor could partake of the restorative measures available by bathing in or drinking the waters of a spring. A belief in the effectiveness of the water lay at the centre of the use of thermal-mineral springs for healing.

Previous Spa Bathing Scholarship

In recent years, there has been an increasing amount of research into the nature and function of Roman baths. In addition to numerous articles and papers about particular issues and topics, several general studies about Roman bathing have also appeared.[1]

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[1] For annual bibliographies on bathing, see Hubertus Manderscheid, *Balnearia* 1-4, no.2 (1993-1996). Also, Hubertus Manderscheid, *Bibliographie zum römishen Badewesen* (Munich, 1988); Janet DeLaine, "Recent research on Roman baths," *JRA* 1 (1988): 11-32; Janet DeLaine, "Roman Baths and Bathing," *JRA* 6 (1993): 348-358.

The main bath typology was originally established by D. Krencker, *Die trierer*

These include Nielsen's detailed catalogue and discussion and the more theme-oriented research by Yegül.[2] Other contributions to the understanding of baths include the survey studies by Heinz and Brödner.[3]

Despite this interest in Roman baths, healing spas have received inadequate attention. Research into spas generally has been uneven and has concentrated especially on the better known sites such as Baiae, Bath, and Badenweiler.[4] Some general work has been carried out, in particular by Yegül and Jackson, both of whom have made substantial contributions to the interpretation of spas.[5] Other useful studies include Houston's brief survey of the spas located in Campania, Brödner's short catalogue of spas, and Grenier's compilation of spas in Gaul.[6] A number of studies have also appeared which centre on

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Kaiserthermen (Augsburg, 1929). A recent article which rejects some of the bath types is found in: Ch. M. Ternes, "Typologie des installations thermales en Gaule Belgique et en Germanie," in Chevallier 1992, 101-116.

[2] Inge Nielsen, *Thermae et Balnea* (Aarhus, 1990); Fikret Yegül, *Baths and Bathing in Classical Antiquity* (New York, 1992).

[3] Werner Heinz, *Römische Thermen. Badewesen und Badeluxus im römischen Reich* (Munich, 1983); Erika Brödner, *Die römischen Thermen und das antike Badwesen* (Darmstadt, 1983).

[4] Baiae: see chapter 4; Bath: B. Cunliffe, *Roman Bath Discovered* (London, 1984); B. Cunliffe and P. Davenport, *The Temple of Sulis Minerva at Bath* vols. 1 and 2 (Oxford, 1985); Badenweiler: H. Mylius, *Die römischen Heilthermen von Badenweiler* (Berlin, 1936).

[5] Yegül 1992, 92-127; Ralph Jackson, "Waters and Spas in the Classical World," in Roy Porter (ed.), *The Medical History of Waters and Spas* (London, 1990), 1-13.

[6] G.W. Houston, "The other spas of Ancient Campania," in R.M. Wilhelm & H. Jones, (eds.), *The Two Worlds of the Poet: New Perspectives on Vergil* (Detroit, 1992): 356-370; Brödner, 161-179; A. Grenier, *Manuel d'Archéologie Gallo-Romaine. Quatrième partie,* (Paris, 1960).

particular themes related to spas, including the role of water and springs. Gasperini's article on the Etruscans and hot springs provides a detailed examination of many important sites in Etruria.[7] The recent publication of a conference on water, health, and disease in the Greek world highlights the important role of the springs in spas.[8] Di Capua's assessment of the role of water and bathing in Roman medicine is also useful.[9]

Thermal-mineral spring bathing has had a long history in both Europe and North America. A widespread interest in springs and hydrotherapeutic treatment, continuing from the Middle Ages up to the present, has contributed to the scholarship on spa bathing in antiquity. Proponents of spa bathing used ancient sources (especially Galen) to legitimize medical practices from the sixteenth century, and created facilities to use thermal-mineral springs.[10] The construction of many new bathing establishments led to the discovery of several ancient spa sites where archaeological remains made it clear that the thermal-mineral springs had also been used by the Romans.[11] Observations pertaining to the post-Roman development of spas has had an impact on the modern interpretations of ancient spas.

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[7] L. Gasperini, "Gli Etruschi e le sorgenti termali," in *Etruria Meridionale. Conoscenza, conservazione, fruizione, Atti del Convegno (Viterbo, 29/30 novembre-1 dicembre 1986)* (Rome, 1988): 27-35.

[8] R. Ginouvès, A.M. Guimier Sorbets, J. Jouanna, L. Villard (ed.), *L'eau, la santé et la maladie dans le monde grec* (Athens, 1994).

[9] F. Di Capua, *L'idroterapia ai tempi dell'impero romano*, Quaderni dell'Impero, Istituto di studi romani 10-11 (1940): 3-60.

[10] For recent publications on the history of thermal-mineral bathing, see: Susan Cayleff, *Wash and Be Healed* (Philadelphia, 1987); J. Donegan, *Hydropathic Highway to Health* (New York, 1986); V. Krizek, "History of Balneotherapy," in S. Licht (ed.), *Medical Hydrology* (Baltimore, 1963). A. Croutier's *Taking the Waters* (New York, 1992) provides a non-academic approach to the subject.

Some sense of the development of the spa in Europe can be found in the following: R. Palmer "'In this our lightye and learned tyme.': Italian baths in the era of the Renaissance," in Porter 1990, 14-22; L. Brockliss, "The development of the spa in seventeenth-century France," in Porter 1990, 23-47; C. Hamlin, "Chemistry, medicine and the legitimization of English spas, 1740-1840," in Porter 1990, 67-81; C.D. Fonseca (ed.), *La città termale e il suo territorio* (Boario Terme, 1986).

Purpose of the Current Study

Although there has clearly been some recent progress in the scholarship about healing spas in Italy, there is no complete study of the thermal-mineral establishments in the secondary literature on bathing. Nielsen did not include spas in her discussion of baths and offered the following comment: "Another subject worthy of study is the spa institution. ... but as thermal baths serve a different purpose and, for that reason among others, have a different architectural form, I have found it reasonable to exclude them from further discussion."[12] Yegül devotes an entire chapter of his recent book to thermo-mineral springs and a further appendix on baths and medicine. Yet, he chooses a limited number of sites located throughout the Roman Empire in his efforts to illustrate the overall development of healing spas. Many questions about the design and operation of Roman spas have yet to be answered or even considered. The identification of baths that functioned as spas has relied largely on the presence of thermal-mineral springs. While this may be an accurate criterion with which to appraise the function of some baths, there are other important features which have not been systematically analyzed. Moreover, there has not been a detailed assessment of the literary evidence, either in its own context or in light of the archaeological remains. In general, there has been a tendency to consider each spa in an individual context rather than as part of a larger development.

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[11] "It is almost certain that nearly all the spas known today were frequented in the Roman period." Jean-Pierre Adam, *Roman Building* (Bloomington, 1994), 275.

[12] Nielsen 1990, 5.

This study is aimed at clarifying many aspects of Roman healing spas in Italy. By using a wide range of evidence, including ancient literary sources and archaeological remains, I aim to provide a clear analysis of the development and design of spas and to examine their social and religious function. My investigation has focused on healing spas during the time of Augustus through Constantine, although a few examples are drawn from late antiquity.

Literary Evidence

The written sources contain a considerable amount of information about healing spas. References to thermal-mineral springs and bathing establishments occur in texts of the first century B.C. and increase in frequency during the first and second centuries A.D. There are also numerous accounts of spas from the later periods of Roman history. I have selected primarily the writers who were either based in or wrote about Italy. Although many of the texts have received previous scholarly attention, little attempt has been made to gather the written material about spas into a cohesive group which takes account of the historical context as well as the type of writing. In order to understand fully the nature of spas as evidenced by the written sources, it is necessary to consider not only the period to which a text belongs but also the purpose of the text.

It is possible to divide the literary sources into two main groups: technical writers and non-technical writers. The first group includes the medical writers such as Celsus, Soranus, Galen, and Caelius Aurelianus and writers with concerns of natural science and philosophy such as Vitruvius, Seneca, and Pliny. It is from the technical writers that the clearest descriptions of the use of thermal-mineral waters and healing spas come. The non-technical category of texts comprises a diverse assortment of documents. Historical writers, including Livy, Diodorus Siculus, and Dio Cassius, and the biographers, Suetonius and Plutarch, provide important accounts of many of the establishments. The *Scriptores Historiae Augustae* (*SHA*) are also a useful source of information. The geographer Strabo is particularly useful because he offers the earliest systematic record of some of the main spas in Italy. Other important material comes from Cicero, Horace, and Martial. Several other sources, including Claudian, Sidonius Apollinaris, and Cassiodorus provide information about the later use of spas. Each presents various glimpses of spa life in varying detail and with a certain amount of bias. These writers, together with a great number of other incidental comments from other sources, are able to throw some light on the practice of spa bathing.

Epigraphic Evidence

Another important source of information about spas is inscriptions. Most of the inscriptions included here have been recovered directly at the site of a thermal-mineral resort; a few have been found elsewhere. They are most often votive in nature, offering either requests for divine intervention or thanks for aid in distress. Only a few describe physical aspects of the establishment. The ancient names of some sites have been determined on the basis of inscriptional evidence.

Unfortunately, as is common with inscriptional evidence, the amount of information that can be drawn from it is somewhat limited. In determining the types of visitors to a spa, the best evidence is the name of the individual identified on an inscription. From the name itself, the social status of a person can often be ascertained, but details about his or her life are usually beyond our grasp. Thus, while it may be possible to determine whether a person is a citizen or a slave, it is nearly impossible to determine the reason for the visit, or even if the thermal-mineral water therapy was successful. It is also difficult to pinpoint a date for an inscription when no intrinsic dating evidence appears in the text. In a few cases, archaeological evidence gives some indication of a date.

The Peutinger Table

The Peutinger Table is one of the most useful sources of information about the cartography and geography of the Roman world (fig. 24-26).[13] Named after its sixteenth century owner, Konrad Peutinger, it is a medieval copy of a map made in the fourth century A.D. Although a number of detailed studies have appeared over the last century, not enough attention has been given to correlating archaeological evidence with that known from the map. The Peutinger Table contains a great deal of information about both the architecture and distribution of Roman spas. One of the symbols depicted most prominently is a "birds-eye" view of a square building with a central, open courtyard filled in with blue colouring which represents water. The front of the building is shown with one or more entrance doors flanked by two towers. On the structure's left side, there is a series of openings which probably represent an enclosed portico or colonnade. Of the 52 examples of this symbol, 28 are labelled with a form of the word *aquae*, suggesting their function as baths. Several of the names given are also known from literary texts which give further evidence about their use. Although the symbol is found throughout the Peutinger Table, fifteen are located in Italy alone. Of these, six can with reasonable certainty be identified with known archaeological remains: Aquae Tauri, Aquae Statiellae, Aquae Cutiliae, Aquae Passeris, Aquae Apollinares, and Aquae Aponi (indicated as *Fons Timavi* on the map). The archaeological and literary evidence indicates that these symbols do not represent ordinary bath buildings and instead should be recognized as healing spas.

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[13] For general studies on the Peutinger Table, see: E. Weber, *Tabula Peutingeriana: Codex Vindobonensis 324*, 2 vol. (Graz, 1976); K. Miller, *Die Peutingersche Tafel*, reprint (Stuttgart, 1962); A. and M. Levi, *Itineraria picta: contributo allo studio della Tabula Peutingeriana* (Rome, 1967); L. Bosio, *La Tabula Peutingeriana* (Rimini, 1983); H. Gros, *Zur Entstehungs-Geschichte der Tabula Peutingeriana*, (Amsterdam, 1980, reprint).

Important questions about the Peutinger Table concern its origin and date.[14] There are some features which support its first century A.D. origin. These include the presence of cities destroyed by Vesuvius' eruption. There are also details which suggest a fourth century date. For example, the use of the name Constantinople can not have occurred before A.D. 324, the year of the founding of the city. It has been postulated that the map is a compilation which was created in the 4th century based on an earlier source. The evidence of spas in Italy seems to confirm this.[15]

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[14] There is some controversy about the dating of the map. For a summary of the proposed arguments for assigning a date from the age of Augustus to the period of Justinian, see Levi, 21-23; O. Dilke, *Greek and Roman Maps* (London, 1985), 113-120; Bosio, 149-162.

The function of the Peutinger Table has also been at the centre of discussion.[16] It is clear that spas were considered important enough to be featured prominently on the Peutinger Table. As a road map, the labelling of important spas would have been very useful to travellers. But they were not, as Levi has suggested, merely "stop-over" places in the way that private villas or *mansiones* were frequented by voyagers.[17] Their placement at the ends of roads as often as along routes between towns does not support this view. Instead, the Peutinger Table served, among other things, as a guide for those wishing specifically to visit particular spas, presumably with the intent of taking advantage of the healing benefits of the spring waters.[18]

Archaeological Background

More than twenty spas known from literary evidence have been identified archaeologically in Italy. The identification of many of these sites has been based on epigraphic evidence. Some of the sites have been tentatively located on the basis of evidence from the Peutinger Table.[19] Three archaeological sites (Agnano, Ponte di Nona, Valchetta Baths) not attested in the sources can also been identified as spas because of the presence of thermal-mineral springs.

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[15] See Appendix 2 for further discussion of this.

[16] For its role in civilian travelling, see Dilke, 115; as part of the *cursus publicus*, see Levi and Levi, 97-124.

[17] Levi, 85.

[18] On voyages for health and cures, see R. Chevallier, *Voyages et deplacements dans l'empire romain* (Paris, 1988), 322-325.

In many cases, detailed information about the archaeological features of the spas has been limited. Those sites which were the location of renewed interest in thermal-mineral bathing have often been inadequately analyzed and modern or continued use has resulted in a poor state of preservation of the ancient buildings. Furthermore, at the turn of the century, the systematic recording of archaeological remains had not fully developed. Although some bath buildings were the focus of extensive excavation, including places such as Teanum Sidicinum, Aquae Aponi, and Aquae Vescinae, insufficient publication of the findings has made further analysis difficult.

For the purposes of this study, I have concentrated on the most substantially excavated and best published spa sites. When possible and reasonable, I have used the ancient name to refer to the spa. The modern location of each ancient spa name is also indicated. Two different sites, however, at Vicarello and the Bagni di Stigliano, both had the name Aquae Apollinares. In order to limit confusion, I have referred to each of these only by their modern name. Relevant bibliography for all sites is found in the Catalogue.

The best known spa resort is the hillside complex at Baiae. Mauiri began renewed research in 1941 on the great bathing establishments and his interpretation of his discoveries has given rise to much subsequent debate. In spite of this scholarly attention, many questions remain about the nature and function of many of the structures. There are other archaeological remains in the area as well which took advantage of the abundant natural resources of thermal-mineral waters.

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[19] A number of spas which appear on the Peutinger Table are not recorded elsewhere. See Appendix 2.

Several other sites in Campania were excavated in the late 19th or early 20th century.[20] At Agnano (located between Pozzuoli and Naples), a large bathing establishment dependent on the heat of natural steam was excavated in 1898 and 1911. A report of the work carried out was published in 1912 by Macchioro. He argued that this was the site of Thermae Angulanae, referred to in a sixth century document.[21] A few miles southeast of the city of Teanum Sidicinum (modern Teano) a bath building in close proximity to mineral springs was investigated in 1907 by Gàbrici. A large complex was revealed which Houston believes was the location of a spring called *Acidula* by Pliny (*HN* 31.5). Another complex identified as a spa is Terme di Suio, near Castelforte. During the construction of a new spa hotel, rescue excavations carried out by Fulvio between 1877 and 1892 uncovered a large bathing establishment. Two inscriptions give the name of Aquae Vescinae.

In the region to the north of Rome a number of other spas have also been excavated. These include the site known as Aquae Tauri, a large establishment four kilometres north-east of Civitavecchia. The excavators, Mengarelli and later Bastianelli, published the site extensively after excavations began in 1919. Their work has revealed an elaborate bathing complex with two main phases of construction belonging to the Trajanic and Hadrianic periods. At Aquae Caeretanae, in the Piano di Carlotta south-west of Civitavecchia, excavations conducted by Cosentino began in 1988 and brought to light two main rooms of a large spa facility. At the small village of Vicarello, near Lake Bracciano, during construction of a modern spa in the last century a portion of an ancient spa was found. Inscriptions show that objects recovered from a hot spring were votives dedicated to Apollo, Aesculapius, the Nymphs, and Silvanus. Although various Roman structures have been found, only a small portion of the ancient spa was uncovered. Another spa, now called the Bagni di Stigliano, was located near the modern road between Manziana and Tolfa. Here, excavations which began in 1970 uncovered a temple-bath complex. The spa establishment which exists today continues to use structures which have their origins in the earlier Roman buildings.

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[20] A preliminary investigation of the spa sites in Campania was carried out by G.W. Houston, 356-370.

[21] Gregory the Great *Dial.* 4.40: ἐπέταξαν ἵνα εἰς τὰ θερμὰ τὰ ἐπονομαζόμενα ᾿Αγλανῶν ἀπελθῶν λούσεται.

Several other important sites are located throughout Italy. In 1959, near Veii in the valley of the Torrente Valchetta, a rescue operation was conducted on a bath building exposed by erosion from the river. These baths, known as the Valchetta Baths, were revealed as an elaborate structure which evidently made extensive use of the hot springs in the area. At Terme di Cotilia, research on a large complex located near Cittaducale has been carried out sporadically since 1969. The site has traditionally been identified as Aquae Cutiliae, a locale associated with Vespasian. Recent excavations have cast some doubt on the healing purpose of the structure because it is thought that the building corresponds more to a villa than a spa. However, there are features which make it quite likely that this complex had a curative function.

Near Padua, in the town of Montegrotto Terme, the Roman structures of the area initially received attention in the 17th century. At the time, several bathing structures were described, but little detailed record was kept. Renewed archaeological investigation, carried out in 1965, revealed extensive Roman remains which have been identified as Aquae Aponi. As at Baiae, the spa of Aquae Aponi seems to have consisted of several different bathing facilities. The baths of San Calogero were excavated by Cavallier and Bernabò Brea on the island of Lipari. A number of bathing rooms in direct association with a thermal-mineral spring have been unearthed. The excavators have identified this complex with that described by Diodorus Siculus (5.10) and mentioned by Strabo (6.2.10). Current excavations at Chianciano Terme are revealing a bathing centre which made use of an abundantly flowing spring. David Soren, director of the project, has recently suggested that this might be the Clusine Springs referred to by Horace (*Ep.* 1.15).

There are, in addition to these places, several other spas for which limited archaeological information is available:

1) A number of votive reliefs with inscriptions have been found on the island of Aenaria, now known as Ischia. That a spa was located on the island is quite likely, given the nature of the springs (and spas) still found there today. Unfortunately, no clear thermal-mineral bathing complex has yet come to light.

2) On the coast near Mondragone, recent survey work by Paul Arthur has revealed the probable location of Aquae Sinuessanae, although no structures have been clearly identified which may have been part of a bathing complex.

3) At Aquae Albulae, eight kilometres west of Tivoli, several inscriptions have confirmed the location of the ancient spa. A structure which may be part of the baths related to the spa is still visible today.

4) At Acqui in Liguria, during construction of a modern spa in 1913, a large Roman pool was discovered which may have formed part of the spa known as Aquae Statiellae in antiquity. Even today, the region has several hot springs. At least one of these seems to have been near the remains of a Roman pool. There was a second circular marble-lined pool in the immediate vicinity of thermal springs.[22]

5) Aquae Calidae ad Vetulonios, reported by Pliny (*HN* 2.106.227) as having fish living in the spring water, has possibly been located near the town of Castiglione della Pescaia. On the western side of Poggetti Vecchi (formerly Poggetti Giugglioli) is a thermal-mineral spring. In 1960, Mazzolai reported that fish lived in these springs and he speculated that this was the same place as described by Pliny. Recent developments of the spring for irrigation have uncovered a tile pavement, an *opus caementicium* wall, and several ceramic vases. Fragments of marble, now re-used in a nearby villa, also came from this site.

Definition of a Spa

A spa is a bathing establishment which made use of naturally-occurring mineral waters.[23] The main function of a bath-complex of this kind was to provide access to the spring waters for therapeutic purposes. The natural springs usually supplied hot water, but it was also possible for cold spring-water to feed the pools of the baths. A bath-house which received its water supply from a nearby spring may be considered a spa if one or more of the following occur: 1) the spring is warm and mineral, although in a few cases the spring could be cold; 2) there is sufficient archaeological evidence to suggest a healing function; 3) an ancient source identifies the site as a healing establishment. Spas were a variation on regular bathing establishment which entailed a different architecture appropriate to their specific health function.

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[22] G. Carducci, "Acqui," *EAA* 1 (1958): 46. No other record of the discovery seems to have been made available.

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[23] I disagree with Houston's definition of a spa (347): "a `spa` is any site where we find evidence indicating the use by the Romans of naturally occurring mineral or thermal water(s) for therapeutic purposes," because this allows any undeveloped or minimally-developed spring to be considered a spa.

Chapter 1

Thermal-Mineral Springs

The essential component of a spa was a supply of thermal-mineral spring water. Water from either a single outlet or multiple springs formed the basis for all activity at healing spas. It is therefore appropriate and necessary to consider the nature of springs selected for use in them. Springs, especially those which had hot water or strong odours and tastes, were often regarded as a mysterious phenomenon and, in turn, provoked a variety of responses. Springs, on the one hand, were considered with a certain amount of reverence and were usually associated with nymphs or gods with healing capabilities.[1] On the other hand, a rational explanation of thermal-mineral springs developed as well. Writers of natural science or philosophy were especially interested in demonstrating that the seemingly strange behaviour of springs followed clearly understood principles. This led to many descriptions and classifications of types of springs and their properties. The various explanations of origins and qualities of springs had an influence on the development of spas. Some establishments gained prominence for having water that was particularly suited for treating certain ailments.

Because of the significance springs had in the functioning of spas, this chapter focuses on the thermal-mineral water itself. It is divided into four sections: 1) terminology for words which refer to springs and spas in the Roman period; 2) explanations for the origins and causes of springs; 3) classification of thermal-mineral springs found at spas; 4) applications of thermal-mineral waters for specific disorders.

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[1] See Chapter 8.

Terminology of Springs

The Latin words normally used to indicate a thermal-mineral spring are *fons* and *aquae*.[2] In Greek, springs at spas are almost always τὰ ὕδατα, the equivalent of *aquae*.[3] In many of the Greek phrases, an adjective is attached to the noun to give a more specific meaning. Thus, phrases such as τὰ ὕδατα θερμὰ, τὰ ὕδατα φαρμάκα and, τὰ ὕδατα αὐτοφυῆ, occur in the texts.[4] Caelius Aurelianus, translating from Greek into Latin, also uses a modifier to specify spring water and uses the phrase *aquae naturales*. The terms are words which are commonly used to refer to water of any sort, not specifically spring water.[5] It is only by context and associated adjectives that it is possible to determine whether, in a particular instance, the subject is a thermal-mineral spring.

There is no clear distinction between the words used to describe the springs and those used to describe the spas. The word *aquae* can refer not only to the springs at a spa, but to the actual spa itself,[6] so that it is sometimes obscure which is meant. There is less confusion in the Greek texts because the writers tended to refer to a spa by name and to identify specific types of springs available at a spa.[7] That the word *aquae* sometimes became part of the name of the spa is apparent in Strabo's reference to 'Ακουαιστατιέλλαι (5.1.11), known in Latin as *Aquae Statiellae* (Pliny *HN* 31.2). The double meaning of the vocabulary for designating spas and springs underlines the importance of thermal-mineral waters for the operation of a healing establishment.

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[2] Another word, *scaturigines*, is also used to mean a spring, but this seems to be more of geyser-type occurrence. See Livy 44.33.3.

[3] The normal terms for spring (i.e. ὁ κρουνός, ἡ πηγή, or ἡ κρήνη) are not normally used for the sources of thermal-mineral water at spas.

[4] e.g., Diodorus Siculus 4.22; Galen *De caus. morb.* (Kühn VII.18); Soranus 3.16.

[5] There are a few other words used as well, e.g., *sacra lympha Baiarum* (Tibullus 3.5); *acidae venae fontium* (Vitruvius 8.3.17); *fluctus Passeris* and *vada Phoebi* (Martial 6.42); *latex* (Claudian *Car. Min.* 26.14 and Cassiodorus *Var.* 2.39.2)

Despite the lack of clarity in terminology, some patterns regarding the vocabulary of springs at spas are evident. Locations could be designated as *aquae*. Thus, when indicating spa locations, the texts refer to Aquae Albulae, Aquae Auguriae, Aquae Cutiliae, Aquae Nepesinae, Aquae Aponi, Aquae Sinuessanae, and Aquae Tauri. But if particular springs were referred to, it was likely that the term *fons* would be used.[8] Sometimes after a location became known specifically as either *fons* or *aquae*, it retained that designation. In a few cases, however, the terms are interchanged, but for the most part the designations remained constant.[9] Some flexibility must have been possible as there is considerable overlap between the two words.[10]

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[6] e.g., Aquae Sinuessanae: Livy 22.13.13; Pliny *HN* 31.4; Tacitus *Ann.* 12.66, *Hist.* 1.72; Aquae Albulae: Pliny *HN* 31.6; Aquae Aponi: Pliny *HN* 2.106.227; Aquae Cumanae: Livy 41.16.3.

[7] eg. Galen *De meth. med.* (Kühn X.536); Strabo 5.2.3; Dio Cassius 66.17.1.

[8] *fons Clusinus* (Horace *Ep.* 1.15); *fons Clitumnus* (Pliny *Ep.* 8.8); *fontes Leucogaei* (Pliny *HN* 31.8); *fontes Araxi* (Pliny *HN* 18.29.114); *fontes Sumbruinarum* (Celsus 4.12.7).

Very often the word, whether it is *aquae*, *fontes*, or τὰ ὕδατα, appears in the plural. Varro explains that the use of a plural came about because there were often numerous springs in one area which were beneficial for various diseases. He also indicates that there was no corresponding singular for the term *aquae caldae* (hot springs).[11] It seems that there is indeed truth in Varro's explanation. Many of the spas relied on several springs for thermal-mineral water rather than a single source.[12] This tendency, then, is reflected in the plural noun. Thus the springs at Baiae and Albula are almost always referred to as *aquae*, since there were many sources of thermal-mineral water in both regions.[13]

Roman Explanations for the Origins of Springs

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[9] Cutiliae was known sometimes as *fons* (Celsus 4.12.7) but more regularly as *aquae* (Pliny *HN* 31.6; Caelius Aurelianus *Chron.* 3.1.10; 3.2.45; 5.4.77). Similarly, Pliny refers to both *Aquae Patavinae* (*HN* 2.106.227) and *Fontes Patavini* (*HN* 31.32) when referring to the spa near Padua (otherwise known as Aquae Aponi).

[10] Consider, for example, Vitruvius' phrases *fontes ex aqua calida* (2.6.4) and *fontes dulcis aquae* (8.3.1) where it is clear that the words are interdependent on each other. Also, despite the more common use of *aquae*, Ovid does refer to the *calidi fontes* when mentioning Baiae (*Met.* 15.713).

[11] Varro *Ling.* 9.69; 41.68.

[12] This is notably different from an aqueduct, called *aqua* in the singular, perhaps in recognition that there was a single source of water (although this was not always the case) or that it acted as a single line of supply.

[13] Propertius 1.11.30; Caelius Aurelianus *Chron.* 3.1.10.

Some Roman natural philosophers, including Lucretius, Pliny, and Seneca, were interested in explaining the phenomenon of springs, especially those which were thermal-mineral. Their various theories provide explanations about the origins of springs and their mineral properties. Vitruvius, Plutarch, and Dio Cassius offer less systematic accounts about springs and the natural heating of water, and many others describe the occurrence of springs in passing. Such interpretations of the behaviour of springs are one aspect of a larger attempt to explain natural events in practical, rational terms.

In the final book of *De rerum natura*, Lucretius addresses the marvel of springs.[14] He first describes a spring in Egypt at the temple of Ammon which flowed with cold water during the day and hot water at night and argues that the change in temperature of the spring water is due to the condition of the soil surrounding the spring and the natural heat particles found near it. When the soil is chilled by the night air, it squeezes out heat particles into the water, making it warm. The reverse effect is caused by the warmth of the sun. The sun's rays relax and loosen the soil, causing the heat particles to disperse into the earth rather than into the water. He also reports a cold spring which caused objects to catch fire when placed near it. In this case, there are not enough natural heat particles to warm the water; but when they are gathered together on an object placed nearby, the heat groups together and catches fire. Although he did not have a thorough knowledge of many aspects of the natural world, Lucretius attempts to describe the natural events which he saw in a logical and practical manner. In accordance with his Epicurean ideas, Lucretius aims to explain the events in strictly atomist terms.[15]

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[14] Lucretius 6.848-905.

Given his interest in explaining natural phenomena, it is somewhat surprising that Lucretius did not comment at length on the wonders of the area around Baiae. He was however aware of the many hot sulphurous springs there and attributes the deadly effects of their fumes on birds flying overhead to the many particles present in the earth, some beneficial and some harmful, which are expelled from the earth into the air.[16]

Vitruvius shows a good deal more interest in the occurrence of thermal-mineral springs.[17] He devotes an entire chapter of Book Eight to discussing their different properties. The reasons for such a large section on springs are outlined in the preface to the book. He believes that water was an essential element for living and deserved a thorough treatment; this included the methods of finding water, the special qualities of springs, and how to use and test water.[18] His account is a practical, rational discussion mixed with a generous amount of legend and unfounded claims.

To begin with, he states that the natural state of water is cold; this is most effectively proven by the demonstration that water which is heated quickly becomes cooler. If water had a natural state of being hot, then it could remain heated without any external force.[19] He also theorizes as to how some springs become hot without impairing the flavour of the water. He suggests that certain minerals naturally present in the ground, *e.g.*, sulphur, bitumen, or alum, heated the earth. This caused *vapores* to rise to the surface. Any fresh water which came into contact with the rising heat from the soil would then become hot itself.[20] Ground water heated in this way retained a good and wholesome taste and flavour and, at the same time, obtained curative properties.

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[15] For a recent discussion of Lucretius' Epicureanism and its impact on his explanations of natural events, see Roger French, *Ancient Natural History* (London, 1994), 151-161.

[16] Lucretius 6.818-839.

[17] On the date of Vitruvius, see B. Baldwin, "The Date, Identity, and Career of Vitruvius," *Latomus* 49 (1990): 423-434.

[18] Vitruvius 8.1.1-6.

Vitruvius therefore attributes the curative nature of particular springs to the minerals in the soil by which the water was heated. However, in some cases, spring water acquired a bad flavour and taste. This could happen when the water either came into direct contact with minerals in the soil or passed through heated soil very far below the surface[21]. By the time such water reached the surface, damage was inflicted on the taste and smell of the cooled-off water, although it might still have beneficial properties. Cold springs which had the appearance of boiling were the result of water colliding with fire underground; the force of the impact generated a violent rush of air which pushed the water up to the surface of the ground.[22]

In the *Quaestiones Naturales*, Seneca begins his study of water by quoting three passages about the origins of springs.[23] A single line from Ovid implies a simple explanation of water coming from a *fons*.[24] Two lines taken from Virgil suggest a more complicated situation with many sources of water altogether forming a bursting sea.[25] The final quotation, taken from Lucilius Junior, refers to the ability of springs to move around in unaccountable ways. Seneca then elaborates on various types of water. A large portion of his discussion concentrates on the water that comes from a spring, using the term *aquae*.

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[19] Vitruvius 8.2.9.

[20] Vitruvius 8.3.1; 8.3.4.

[21] Vitruvius 8.2.8; 8.3.2.

[22] Vitruvius 8.3.2.

[23] Seneca *QNat.* 3.1.1.

He believes the world to be composed of four elements (earth, air, fire, and water) and that water is part of the continual process of creation and destruction.[26] Water exists in veins underground and follows regular cycles of coming forth and receding. Springs, then, are capable of having regular cycles, and as a form of water can be created from any one of the elements.[27] Seneca questions Theophrastus' theory that springs dry up when land is not cultivated.[28]

As to the nature of hot and cold springs, Seneca considers whether springs are naturally hot or become heated.[29] He provides two explanations as to why water underground is able to become hot. Using Empedocles as a source, he describes fires which exist below the surface of the earth. Water passes over the fires and is heated.[30] Another theory is more closely related to that expounded earlier by Vitruvius: that minerals heat the ground and water passing through the place is also heated; but whereas in Vitruvius' account, water could retain its purity in this circumstance, Seneca writes that water takes on a different taste and odour from its contact with the minerals.[31] As proof of the heating ability of minerals, he notes that water poured on quick-lime will boil.[32]

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[24] Quoted from Ovid *Met.* 3.407.

[25] Quoted from Virgil *Aen.* 1.245-246.

[26] Seneca *QNat.* 3.10.1. For a comment on the Stoic view concerning the changeability of the elements, see G.E.R. Lloyd, *Greek Science After Aristotle* (New York, 1973), 28.

[27] Seneca *QNat.* 3.15-16.

[28] Seneca *QNat.* 3.11.5.

[29] Seneca *QNat.* 3.1.2.

Pliny the Elder says surprisingly little about the origin of springs. He is far more concerned with the characteristics of various springs and, as in the rest of the Encyclopedia, does not attempt systematically to separate information known by folklore from that known by empirical evidence.[33] He has a concept of different types of springs, but is not interested in why the springs have acquired their particular qualities or even why those qualities seem to have beneficial properties. Thus he observes that many springs are wondrous because of their boiling temperatures, but he does not attempt to delve any deeper to understand why springs are hot.[34]

Other writers also had ideas about the heating of spring water. Ovid's description of a boiling reaction between a mixture of water and sulphur suggests that he believed spring water could be heated in this way.[35] Dio Cassius has some notion of how springs are heated, but his explanation is far from scientific. He says that at Baiae the springs result from a mixture of cold water and hot fire.[36] Plutarch rejects the theory that springs are caused by the pressure created by digging into the ground. He is more inclined to believe that water continually exists in places under the earth's surface and that springs occur when the water is tapped.[37] Claudian, in the fifth century, offers several different explanations for the heating of the Aponus, including the theory that cold water falls into veins of sulphur and comes forth hot.[38]

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[30] Seneca *QNat.* 3.24.1.

[31] Seneca *QNat.* 3.20.1.

[32] Seneca *QNat.* 3.24.4.

[33] See French 1994, 196-255.

[34] Pliny *HN* 2.106.227.

Roman Classifications of Thermal-Mineral Springs

The differences between various types of water were another aspect of thermal-mineral springs which had importance for the Roman writers. Springs at spas were classified according to their temperature, smell, and taste.[39] They were also categorized by the perceived effects on health. Only the very broadest distinctions were discernible; subtleties or combinations of mineral contents were not usually taken into account.

The primary basis for classifying springs was their temperature. Temperature was viewed as an important factor in the effectiveness of thermal-mineral therapy. Springs were often known for being cold (*frigidus*) or hot (*calidus*). Many of the waters at various spas were known for having waters at a cooler temperature. These included Albula, Cutiliae, Sumbruvium, and Teanum Sidicinum.[40] The extremely cold waters at Cutiliae were described as *gelidissimae*.[41] There is also a recommendation for the use of cold springs with alum or iron.[42]

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[35] Ovid *Fast.* 1.267.

[36] Dio Cassius 48.51.1-5.

[37] Plutarch *Aem. Paul.* 14.2.

[38] Claudian *Car. Min.* 26.67-78.

[39] Seneca *QNat.* 3.2.

Hot or warm springs also appear with frequency in the texts. This is not particularly surprising as the phenomenon of a hot spring would have attracted attention, and many spas were known for their warm springs. Baiae was of course most recognized for its heated waters. Many other places also had outlets of hot springs, including Aenaria (Pithecussae), Aquae Caeretanae, the Ciceronian Spring, Cumae, the baths of the Liparians, Neapolis, Aquae Passeris, Aquae Aponi, Puteoli, Aquae Senanae, Aquae Sinuessanae, Aquae Tauri, and Aquae Vesevinae.[43] Although Albula was normally considered to have cold spring water, Suetonius relates that Augustus used hot water as part of his cure.[44]

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[40] Caelius Aurelianus *Chron.* 2.1.48; 5.2.40; Celsus 4.12.7; Pliny *HN* 31.5; Strabo 5.3.1; 5.3.11 Suetonius *Vesp.* 24; Vitruvius 8.3.2; 8.3.5.

[41] Pliny *HN* 31.6.

[42] Caelius Aurelianus *Chron.* 4.1:1.

[43] e.g., Caelius Aurelianus *Chron.* 2.1.48; Cicero *Att.* 1.16; Diodorus Siculus 4.22.1; 5.10.1; Galen *De trem.* (Kühn VII.600); *De san. tue.* (Kühn VI.423); Josephus *AJ* 18.248; Lucretius 6.747; Ovid *Met.* 15.713; Pliny *HN* 31.2-3; Rutilius Namatianus 1.249; Seneca *QNat.* 3.1.2; Strabo 5.2.3; 5.2.9; 5.3.6; 5.4.5-6; 5.4.7; 5.4.9; Suetonius *Nero* 31.3; Varro *Ling.* 9.69; Vitruvius 2.6.4; 8.3.4.

[44] Suetonius *Aug.* 82.2.

The minerals present in the spring water also had importance. Very few texts refer to the full range of types of thermal-mineral springs. Among the medical writers, only Caelius Aurelianus and Galen make regular reference to the possible types of springs and their variations.[45] Pliny, Seneca, and Vitruvius each report a number of different springs. Vitruvius and Pliny also classify many springs according to their mineral content. Seven types of spring attracted the attention of the writers who were concerned with the waters found at healing establishments. From the variation in their accounts, it is apparent that the classification of thermal-mineral waters at spas was not systematic. This may have occurred for at least two different reasons. The first is that it is very difficult to analyze the mineral content of springs.[46] Most of the classification must have been done on the basis of rather crude observations. These would have included smell, taste, appearance, and mineral deposit build-up. This would explain the number of spas for which there are conflicting reports about the type of springs available. The technical problem of identifying the dissolved minerals restricted the ability to discern subtle variations in the chemical content of the water. Even if the Romans had been able to separate out the minerals in the water, a fully developed mineralogical system did not exist for classifying them.[47] The second reason for the discrepancies in accounts of the springs may stem from the fact that there may often have been multiple springs at any single spa. Archaeological research at places such as Baiae and Aquae Aponi has made it clear that a spa did not necessarily exist as a single bathing establishment. A spa could make use of many springs in order to provide therapy for a wider range of diseases and ailments.

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[45] Although Caelius Aurelianus referred to particular types of thermal-mineral springs, Soranus only referred to natural waters in general. This may be indicative of information added by Caelius Aurelianus as a later translator of Soranus.

[46] For the difficulties encountered in analysis of thermal-mineral spring water in spas from the seventeenth and eighteenth centuries, see Noel Coley, "Cure with Care," *Medical History* 23 (1979): 191-214; and Noel Coley, "Physicians and the chemical analyis of mineral waters in eighteenth-century England," *Medical History* 26 (1982): 123-144.

The most commonly identified springs were sulphurous. In Latin, the mineral in the springs was called *sulfur*, *sulphur*, or *sulpur*. The adjective used to describe the water could be *sulfuratus*, *sulfureus*, or *sulfurosus*. Galen uses the Greek term θειώδης. Galen in particular often refers to sulphur springs, sometimes regarding them as advantageous and other times finding them injurious. The waters at Albula and Aponus were considered by some as being sulphur springs. The name "Albula," related to the word *albus* (white), may refer to the mineral deposits at the springs.[48] The waters at Baiae which commanded the most attention were those which were sulphurous. Two other locations, Araxus and Lake Vadimon, although not actually developed as spas, were known for the healing capabilities of their sulphur springs.[49]

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[47] For ancient interest in mineralogy, see J.F. Healy, "Mineralogy and Metals," in Roger French and Frank Greenaway, ed. *Science in the Early Roman Empire: Pliny the Elder, his Sources and Influence* (London, 1986), 111-146; and J. Healy, *Mining and Metallurgy in the Greek and Roman World* (London, 1978).

[48] The name Albula may also be related to this use of the word as an earlier name of the Tiber river. For the appearance of sulphur springs: Seneca *QNat.* 3.20.4; Martial 1.12.2.

[49] Caelius Aurelianus *Chron.* 4.7.104; Claudian *Car. Min.* 26.71-80; Galen *De tremore* (Kühn VII.600-601); *De san. tue.* (Kühn VI.423); *De simp. med.* (Kühn XI.392, 393, 387); *Hipp. aph.* (Kühn XVII/2.657); *Hipp. epid.* (Kühn XVII/2.155); Horace *Ep.* 1.15; Lucretius 6.747-8; Martial 1.12.2; 6.43; Pliny *HN* 18.29.114; 31.2; Pliny *Ep.* 8.20;

Another type of water used at thermal-mineral spas was *aquae nitrosae* or νιτρώδης.[50] Galen frequently refers to nitrate springs when discussing thermal-mineral waters. Caelius Aurelianus also recognized this kind of spring; he considers the waters of Aenaria to have *qualitatem nitri.* Other places where *aquae nitrosae* were identified were Baiae, Cutiliae, and Pinnae Vestinae.[51]

Galen and Caelius Aurelianus also identifed alum springs (στυπτηριώδης or *alumen*) They believe that Albula had alum springs, contrary to a popular belief expressed by Martial and Seneca that it had sulphur springs. There was a similar discrepancy over the springs at Aquae Cutiliae. Pliny and Vitruvius write that they were nitrate springs but Caelius Aurelianus says they contained alum. Caelius Aurelianus also names two other sites in Italy which had alum springs: Nepesinae and Auguriae. Alum springs were among the many found at Baiae.[52]

Bitumen springs were used for treatment as well. Springs containing bitumen were called *bituminatae* or ἀσφαλτώδης. Galen refers to their use and properties repeatedly.

Seneca *QNat.* 3.2.1; Seneca *QNat.* 3.20.4; Strabo 5.4.6; Vitruvius 8.3.4.

[50] From the many translations of the Latin word used to describe this type of spring (nitrum, nitrate, nitre, soda, alkaline) it seems that there was uncertainty about what type of springs were really described. For convenience, *aquae nitrosae* will be used in referring to nitrate springs.

[51] Caelius Aurelianus *Chron.* 1.5.169; 5.4.77; Galen *De tremore* (Kühn VII.600-601); *De simp. med.* (Kühn XI.387, 392, 393); *Hipp. aph.* (Kühn XVII/2.657); *Hipp. epid.* (Kühn XVII/2.155); Pliny *HN* 31.2; 31.32; Vitruvius 8.3.5.

[52] Caelius Aurelianus *Chron.* 4.1.1; 5.4.77; Galen *De san. tue.* (Kühn VI.423); *De meth. med.* (Kühn X.535, 536); *De simp. med.* (Kühn XI.393); *Hipp. epi.* (Kühn XVII/2.155); Martial 1.12.2; Pliny 31.32; Seneca *QNat.* 3.2.1; Vitruvius 8.3.4.

At Baiae, bitumen springs could be found. Aquae Cutiliae was also reputed to have this kind of spring, producing yet another inconsistency in what was thought to be at this spa.[53]

Acid springs, described by the adjective *acidus* or ὀξὺ, were also thought to cause healing. Vitruvius identifies two places in Italy with acid springs, Velia and Teanum. Pliny records the name of the spring at Teanum as "Acidula," a clear reference to the nature of the water. A similar inference can be made for the spring called "Acidulus" in the town of Venafrum. It can be assumed that Aenaria had acid springs because Pliny groups these waters with other acid springs. Acid springs were also noted at Puteoli and Baiae.[54]

Two other kinds of springs, salt and iron, were recognized by the Romans. Galen includes salt springs (ἅλς) among springs that had benefits. Pliny indicates that salt (*salsae*) springs could be found at Baiae and that sometimes salt and acid could be mixed together in a single spring. Iron springs (*ferrugineae* or *ferratae*) were mentioned only rarely by the Romans. Scribonius Largus refers to benefits to be had from the iron springs in Etruria. Seneca considers iron springs as medicinal.[55]

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[53] Galen *De san. tue.* (Kühn VI.423); *De trem.* (Kühn VII.600-601); *De meth. med.* (Kühn X.535, 536); *De simp. med.* (Kühn XI.392, 393); *De simp. med.* (Kühn XI.387); *Hipp. aph.* (Kühn XVII/2.657); *Hipp. epi.* (Kühn XVII/2.155); Pliny *HN* 31.2; 31.32; Vitruvius 8.3.4.

[54] Pausanias 4.35.12; Pliny *HN* 31.2; 31.5; Vitruvius 8.3.17-18.

[55] Caelius Aurelianus *Chron.* 4.1.1; 5.4.77; Galen *De simp. med.* (Kühn XI.393); *Hipp. epi.* (Kühn XVII/2.155); Pliny *HN* 31.2; Scribonius Largus 146; Seneca *QNat.* 3.2.1.

Curative Properties of Thermal-Mineral Springs

Roman sources frequently advise the use of cold springs for all manner of diseases. In some cases, especially at Cutiliae and Albulae, cold springs are recommended although other qualities present in the same waters are also recognized as having curative powers. Perhaps the most famous cold water treatment was Antonius Musa's prescription for Augustus: Suetonius relates that the cold baths cured Augustus' liver condition.[56] In general cold springs were often thought to bring about good health. Strabo claims that bathing in and drinking cold spring water were beneficial for various diseases.[57] As a medical writer, Celsus advocates the use of cold waters and encourages treatment by cold springs specifically for stomach disorder.[58] Pliny the Elder suggests that cold springs at Aquae Cutiliae help with problems of the stomach, nerves, and the entire body.[59] He also claims that stones were helped by the cold water from the spring known as Acidula at Teanum Sidicinum.[60] Caelius Aurelianus says that arthritis could be alleviated by using both cold and hot spring water.[61] In one case, overuse of cold water led to disaster. While trying to alleviate a minor illness, Vespasian is said to have damaged his intestines by taking too much cold water at Cutiliae and consequently died.[62] Galen was careful in his recommendations for using cold springs and did not advise them in certain cases.[63]

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[56] Suetonius *Aug.* 81.1. Note that this does not involve an actual spring, but rather cold bathing. The success of this treatment may have led to the further belief that cold springs were effective.

[57] Strabo 5.3.1; Strabo 5.3.11.

[58] Celsus 1.1.2.

[59] Pliny *HN* 31.6.

[60] Pliny *HN* 31.5.

[61] Caelius Aurelianus *Chron.* 5.2.40.

Many benefits were believed to be derived from using hot springs. Varro says that hot springs are able to relieve many diseases, without giving any particulars.[64] Cures for specific concerns such as nerves, gall-stones, or fatigued eyes were associated with hot springs, although for these disorders, the actual location was significant as well.[65] Although the waters at Albula were usually classified as cold, Pliny uses the term *egelidae*, which generally means lukewarm, to describe the waters at Albula and considered them a good means for treating wounds.[66] Caelius Aurelianus describes them as hot springs which can provide treatment for arthritis or for paralysis.[67]

For the most part, the texts give a fairly clear idea as to what type of spring is most useful for alleviating an illness. Yet there are also many general statements advising thermal-mineral bathing that do not indicate the exact nature of the most beneficial sort of spring. The majority of these are found in the translations by Caelius Aurelianus of

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[62] Suetonius *Vesp.* 24.

[63] Galen *De caus. morb.* (Kühn VII.18).

[64] Varro *Ling.* 9.69.

[65] *Pliny HN* 31.3; Strabo 5.49; Suetonius *Aug.* 82.2.

[66] Pliny *HN* 31.6. Note that the waters at Albula were also considered as cold by other authors. See below.

[67] Caelius Aurelianus *Chron.* 5.2.40; 2.1.48.

Soranus. He prescribes *usus aquarum naturalium* for a number of ailments, including epilepsy, toothache, liver and spleen disorders, jaundice, poor body condition, inadequate nutrition, dropsy, and digestive disorders.[68] By the time Caelius Aurelianus was writing in the fifth century A.D., it may have been unnecessary to include details at length about what type of waters to use because there was a wide-spread knowledge of the benefits of hot springs. It seems likely, in any case, that except in specific recommendations, the use of hot springs was implied in the suggested treatments.

Sulphur waters were among the most commonly recognized as having curative properties. This may be in part due to the unmistakable odour of sulphur; its strong smell provided instant identification of a substance which had powerful associations with mysteries and divinities in the ancient world.[69] Sulphur spring waters were generally considered to be good for muscular rejuvenation.[70] As a cleansing agent, sulphur was effective for improving skin and treating wounds.[71] There seems to be also some belief that sulphur served to benefit bones; it both healed fractures and strengthened teeth.[72] Celsus, while not directly referring to sulphur springs, prescribes adding sulphur to water and pouring it over a patient's head; this will induce sneezing in order to stop spasms.[73] Soranus, as preserved in the text of Caelius Aurelianus, recommends sulphur spring water for treating ailments of the colon.[74]

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[68] Caelius Aurelianus *Chron.* 1.4.111-112; 2.4.78; 3.5.45; 3.5.74; 3.6.89; 3.7.93-94; 3.8.117; 4.3.76.

[69] For example, sulphur and its connection to lightning: Lucretius 6.219-222; to purification: Ovid *Met.* 7.261; to Bacchic ritual: Livy, 39.13.12.

[70] Vitruvius 8.3.4; Horace *Ep.* 1.15.

[71] Pliny *HN* 18.29.114.

[72] Pliny *Ep.* 8.20.

Like sulphur springs, alum and alkaline springs were not limited to use for a single class of ailments. Advice on the use of both alum and alkaline springs was considerably less frequent than prescriptions for sulphur, yet each type of spring was considered to have definite curative properties. Vitruvius recommends alum springs for cases of paralysis and stroke.[75] Caelius Aurelianus prescribes alum waters for diseases of the bladder, as well as exposing a patient to alum vapours for what may have been a skin disease or leprosy.[76] Alkaline waters are believed by Vitruvius to be helpful in curing tumours when taken internally.[77] Caelius Aurelianus advises odourless alkaline waters to treat mania, because the lack of vapours would result in less damage to the brain.[78]

There is less inconsistency in the sources regarding treatment with some of the other types of mineral springs. Acid springs are claimed by both Vitruvius and Pliny to rid a patient of stones in the bladder.[79] Bitumen springs were effective as a purge and could help with internal disorders.[80]

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[73] Celsus 4.3.3.

[74] Caelius Aurelianus *Chron.* 4.7.104.

[75] Vitruvius 8.3.4.

[76] Caelius Aurelianus *Chron.* 5.4.77; 4.1.1.

[77] Vitruvius 8.3.5.

[78] Caelius Aurelianus *Chron.* 1.5.169.

Although many Roman writers believed that thermal-mineral springs had curative properties, variations are evident in the application of the waters. According to the ancient sources, different ailments could be treated by the same types of thermal-mineral springs. Some authors prefer merely to identify springs as medicinal without attempting to classify the diseases that could be cured by them. In a few cases, what was considered as valid treatment in the earlier periods did not necessarily continue to be accepted later. There is also some disparity between what the medical writers and the non-specialists recommend.

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[79] Pliny *HN* 31.5; Vitruvius 8.3.17-18.

[80] Vitruvius 8.3.4; Pliny *HN* 31.32.

Chapter 2

Early Development and Distribution of Spas

The development of bathing for both hygiene and therapy had already occurred by the fifth century B.C. and recommendations for different types of bathing are commonly found in the Hippocratic texts.[1] Bathing was considered one of the means by which a person could both maintain and restore health.[2] This connection with health was transmitted from the Greeks to the Romans together with the institution of bathing.[3]

The use of thermal-mineral springs, especially hot sulphurous ones, was known in the Greek world and some springs, such as those at Thermopylae and Aedepsos in Euboea, were known for their healing capabilities.[4] Yet there is not much early evidence for a developed interest in thermal-mineral bathing. At many healing sanctuaries in the Greek world, the springs, an integral part of worship and ritual, were normally not thermal-mineral but tended to be fresh water, perhaps considered more effective in ritual.[5] Further proof of the overall reluctance to embrace thermal-mineral water therapy is given in the Hippocratic text, *Airs, Waters, and Places*. The author claims that water which comes from rocks, or hot springs, or passes through minerals is harmful to health because of its hardness and heat.[6] It is therefore apparent that the Greeks did not engage extensively in thermal-mineral bathing, although ordinary bathing was common.

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[1] See R. Ginouvès, *Balaneutikè* (Paris, 1962), 21-225; M. Fontanille, "Les bains dans la médecine greco-romaine," in André Pelletier (ed.), *La médecine en Gaule. Villes d'eaux, sanctuaires des eaux* (Paris, 1985), 15-24; L. Villard "Le bain dans la médecine hippocratique," in Ginouvès 1994, 41-60; Yegül 1992, 352-355.

[2] See for example: Hippocratic Corpus *Off.* 3, 4, 6 where bathing is tied into overall considerations of preserving health; and Hippocratic Corpus *Acut.* 65-68, where a lengthy discourse on the merits and harms of bathing are discussed in light of attempting to treat specific diseases.

[3] There has been much discussion about the relationship between Greek and Roman bathing and the way by which heated bathing became institutionalized. One argument supposes that the Greeks had already become accustomed to the practice of hot water bathing and transmitted this concept early on to the Romans. Another theory suggests that the development of bathing facilities which made use of natural hot springs in Campania was largely responsible for the spread of full immersion in hot water contained in communal pools. See DeLaine 1988, 109; Inge Nielsen, "Considerazioni sulle prime fasi dell'evoluzione dell'edificio termale romane," *Analecta Romana Instituti Danici* 14 (1985): 104.

[4] See Ginouvès 1962, 362-363.

Despite the reluctance to use mineral springs for therapeutic purposes in the Greek world, the Romans seem to have embraced it. The early use of springs is reflected in votive deposits at sites such as Aquae Aponi, Aquae Sinuessanae, and Chianchiano Terme - all places that were later developed as spas. This chapter presents the evidence for the earliest use of spas in Italy. The development of these institutions fits into many of the concepts of Roman medicine.

The Earliest Development of Spas in Italy

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[5] See Ginouvès 1994, 237-246; G. Argoud "L'utilisation médicale de l'eau en Grèce et le plan des sanctuaires d'Asclépios," in *Archéologie et médecine VIIèmes Rencontres internationales d'archéologie et d'histoire d'Antibes, 23, 24, 25 octobre 1986* (Juan-les-Pins, 1987), 531-536.

[6] Hippocratic Corpus *Aer.* 7.48-57; Also, see, J. Jouanna, "L'eau, la santé e la maladie dans le traité des *airs, eaux, lieux*," in Ginouvès 1994, 25-40.

Livy records the earliest mention of a site later known as a spa when he reports that the waters from the hot spring at Caere (*aquas Caeretes*) flowed with blood.[7] He does not mention any healing capacities of the water, but this suggests that the spring was well-known by the time of the Hannibalic invasions. He also describes the devastation of the war in 217 B.C. which reached Aquae Sinuessanae (*ad aquas Sinuessanas*).[8] These citations shed little light on the actual early use of the sites as spas. Although there is a clear reference to the hot springs at Caere, Livy offers no indication of a medical or restorative use of the waters. Similarly at Sinuessa, the name as cited suggests the presence of springs, but little futher information can be obtained.

Plutarch records that in 209 B.C., Marcellus, having suffered severe losses after engaging in battle with Hannibal, retreated to Campania and passed the summer restoring the soldiers at Sinuessa.[9] He does not indicate that the soldiers took part in healing activities at a developed facility or even at a thermal-mineral spring. Indeed, if the five thousand wounded men were to receive treatment at a single institution, this would suggest a fairly developed establishment, for which there is no other evidence at such an early date. It may be that the area was simply considered beneficial for rest and relaxation and that individuals could take advantage of whatever resources were available.

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[7] Ovid's description of Aesculapius' legendary journey from Epidauros to Rome in 293 B.C. might also be considered as an early attestation. (Ovid *Met.* 15.622ff.) When a deadly plague struck, after consultation of the Sibylline Books, the healing god Aesculapius was brought to Rome in the form of a snake. The *calidi fontes* which were encountered along the way (15.713) must refer to the springs of Baiae. However, this should not be construed as anything more than mythological narration. The fact that Ovid mentions the hot springs of Baiae as part of Aesculapius' voyage may be merely understood as an allusion to the development of the area during Augustan times.

On the waters at Caere: Livy 21.62.5; 22.1.10; 22.36.7.

[8] Livy 22.13.10.

[9] Plutarch *Marcellus* 26.4.

Although Plutarch closely follows Livy for this period, he alters the destination of the troops.[10] Livy says that the troops went to Bruttii. The choice of Sinuessa by Plutarch as the place to which the injured retired seems to be deliberate. By the time he wrote, Aquae Sinuessanae had developed into a well-known spa. It could be that he chose to insert a location known in his own time into an historic context. The end result is that this reference probably gives more information about Aquae Sinuessanae during the second century A.D. than during the earlier period.

Livy identifies Aquae Cumanae as the place where, in 176 B.C., the consul Cn. Cornelius Scipio Hispallus sought relief for aching limbs resulting from a fall. He did not reach the springs for treatment, but died at the town of Cumae.[11] This is the only mention of Aquae Cumanae and it has generally been accepted that the name refers to the springs in the Baiae region.[12] It is not clear whether the consul was seeking a particular developed facility or whether he simply hoped for the curative powers of the springs, but his visit is unlikely to have been unique.[13]

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[10] cf. Livy 27.15.1.

[11] Livy 41.16.3.

[12] e.g., John D'Arms, *Romans on the Bay of Naples* (Cambridge, Massachusetts, 1970), 3; Amedeo Mauiri, *The Phlegraean Fields* (Rome, 1969, translation and reprint of *I Campi Flegrei*, Rome, 1958, 2nd ed.), 66; M. Borriello and A. D'Ambrosio, *Baiae-Misenum. Forma Italiae regio I volumen XIV* (Florence, 1979), 18.

[13] D'Arms argues that there was an increased Roman presence in Cumae, evidenced in particular by a change of official language from Oscan to Latin in 180 B.C. See, D'Arms 1970, 3-5.

Another important source of information about the early development of spas comes from a Republican inscription from Aquae Aponi. The inscription names Q. Marcius P. f. Ser(gia) Rex. Pliny names a Q. Marcius Rex as the urban praetor of Rome (144 B.C.) who was responsible for repairing the Aqua Marcia.[14] The interpretation of the inscription is not entirely clear, but the phrase *tu viator vale ad aquas* indicates that the activity of Q. Marcius P. f. Ser(gia) Rex was related to the spa at Aquae Aponi. The text of the inscription uses several early forms, including *sei* for *si* and *liberei* for *liberi*, identifying it as an early example. If this is the same individual identified by Pliny, this would suggest a mid-second century B.C. date for the inscription. This would then provide testimony to an early phase of development at the spa.

The Role of Spa Bathing in Roman Medicine

The practice of hydrotherapy, which involved various activities and methods of applying water at baths of any kind, early on became part of Roman medicine, and can be distinguished from the use of mineral spring water applied for therapeutic purposes. There is no question that hydrotherapy which took place in ordinary baths formed a larger portion of medical treatment than any curative use of thermal-mineral springs.[15] The question of the spread of bathing and hydrotherapy in general, at least in the city of Rome, has been demonstrated to be largely the result of the promulgation of its positive benefits by Asclepiades of Bithynia.[16] Although the practice of hydrotherapy certainly had an important role in the development of Roman bathing, the effect it had on the use of spas needs to be analyzed more closely. If Asclepiades' influence was felt in the beginning of the first century B.C., it becomes necessary to reconcile the apparent disparity in time between the spread of the use of baths for health and the practice of spa bathing which had already occurred at Aquae Cumanae and possibly at Aquae Aponi and Aquae Sinuessanae. I would argue that the popularity of hydrotherapy is, in a sense, a separate development from that of the spas. This is not to say that spa-bathing did not benefit from the wide-spread acceptance of medical treatment at baths. In fact, during the early Empire, the increased number of spas in Italy demonstrates that this method had become acceptable to the populace.

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[14] Pliny *HN* 31.41. Also named by Frontinus 1.7; Pliny *HN* 36.121; Plutarch *Coriol.* 1.1 (named as Κόϊντος Μάρκιοι). See also Münzer, Paully-Wissowa 28, ser. 1 (Stuttgart, 1930) s.v. Q. Marcius Rex (no. 90), 1582-1583.

[15] A number of studies have been carried out on the interaction between bathing and health. See, for example, most recently, G. Fagan, *Bathing in Public in the Roman World* (Ann Arbor, forthcoming), 128-155. (I am grateful to Dr. Fagan for providing me with an advance copy of the relevant chapter of his work.) Also, see F. Yegül 1992, 352-355. A. Garzya, "L'eau dans la littérature médicale de l'antiquité tardive," in Ginouvès

The differences between spa-bathing and ordinary hydrotherapy are most visible in the earlier stages of development. Spa-bathing, at its very core, relied on the use of

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1994, 109-119; C. D'Amato, "Terme e cure termali nell'antica Roma," in *Terme Romane e vita quotidiana* (Rome, 1988), 10-16; F. Di Capua, *L'idroterapia ai tempi dell'impero romano* (Rome, 1940); R. Jackson 1990, 3-4.

On the use of baths for other types of medical procedures, see Ernst Künzl, "Römische Thermen als Spitäler?," *RÖ* (1989-1990): 147-152. W. Heinz, "Antike Balneologie in Späthellenistischer und römischer zeit. Zur medizinischen Wirkung römischer Bäder,"*ANRW* 2.37.3 (1996), 2411ff.

[16] See G. Fagan, forthcoming, 140-155. For the main primary source on Asclepiades, see Pliny *HN* 26.12-20. It is important to note, however, that the role of Asclepiades should not be over-emphasized to include the use of spas or even beyond the fashionable world of Rome.

spring water. It was not, as in regular bath therapies reportedly given by Asclepiades, the result of using hot or cold baths. The benefits achieved at a spa relied on the actual perceived properties of the water - more so than on the activity of bathing. The traditional ideas of Roman medicine as found in the texts of Cato and the elder Pliny relied largely on folk remedies and cures which encouraged household self-sufficiency.[17] The influx of Greek doctors such as Asclepiades, Themison, and Charmis, and medical ideas was a marked contrast to this and was initially viewed with distrust.[18] Yet, as with other aspects of Greek intellectual thought, the Romans were able to find in it some things of interest - especially those which were useful or practical.[19] The most effective method of coming to terms with the strong Greek influence was to bend it into something recognizably Roman.[20] Thus, Greek medical ideas of hydrotherapy as exemplified by the Hippocratic texts were modified as the Romans developed facilities to make use of spring water. This resulted in a combination of Greek theory about alterations in the state of the bodily humours with more tangible, practical concerns of discernible properties of thermal-mineral water.

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[17] Various remedies: Cato 123, 126, 127. Attitudes to medicine: Pliny *HN* 29.15-23. See also Jerry Stannard, "Medicinal plants and folk remedies in Pliny, *Historia naturalis*," *History and Philosophy of the Life Sciences* 4 (1982): 3-23. For general views on the medical schools, see Fabio Stok, "Le scuole mediche nella tradizione enciclopedica latina," in Philippe Mudry and Jackie Pigeaud (ed.), *Les écoles médicales à Rome* (Geneva, 1991), 83-93.

[18] John Scarborough, *Roman Medicine* (London, 1969), 56; R. Jackson 1988, 10. For Pliny's view on foreign doctors and their entry into Rome, see Pliny *HN* 29.6-13.

[19] See V. Nutton, "The Perils of Patriotism: Pliny and Roman Medicine," in French and Greenaway 1986, 30-58, esp. 37-40; Jackson 1988, 10; French 1994, 149-195.

[20] The question of the development of a distinctly Roman medicine which initially displayed reserve in accepting the new Greek ideas, see Philippe Mudry, "Réflexions sur la médecine romaine," *Gesnerus* 47 (1990): 133-148.

The medical writers themselves advocate the use of thermal-mineral waters and they serve as the best indicators of the value placed in spas. As proponents of the Methodist sect of medicine, Soranus and Caelius Aurelianus frequently recommend spa bathing. This is not surprising for a school of doctors who were generally renowned for therapies which emphasized pleasant remedies.[21] Other writers with medical expertise are more limited in their exhortations to use thermal-mineral waters. Celsus prefers to recommend bathing in general and limits the use of particular spring waters to only a few instances.[22] Scribonius Largus advises using hot spring water only a single time.[23] Galen, too, is somewhat cautious in prescribing spa visits and thermal-mineral water use. He is aware of the potential harm caused by springs as well as their benefits and therefore tends to advise bathing and water in general rather than any specific location and type of spring.[24]

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[21] On the Methodist school, see L. Edelstein, "The Methodists," Owsei Temkin and C. Lilian Temkin (ed.), *Ancient Medicine* (Baltimore, 1967), 173-191; Jackie Pigeaud, "Les fondements théoriques du méthodisme," in Mudry and Pigeaud, 8-50.

The main edition for Caelius Aurelianus remains that of I.E. Drabkin (ed. and trans.), *Caelius Aurelianus. On Acute Diseases and On Chronic Diseases* (Chicago, 1950). Another edition has recently appeared: Gerhard Bendz (ed.), *Caelius Aurelianus, Akute Kankheiten. Chronische Krankheiten* (Berlin, 1990). The main edition for Soranus continues to be Joannes Ilberg (ed.), *Sorani. Gynaeciorum Libri IV* (Leipzig, 1927) (*Corpus medicorum graecorum IV*). The first volume of a new edition is currently under preparation: Paul Burgière, Danielle Gourevitch, and Yves Malinas (ed. and trans.), *Soranus d'Ephèse. Maladie des femmes.* vol. 1 (Paris, 1988). The English translation of Owsei Temkin continues to be influential: O. Temkin, *Soranus' Gynecology* (Baltimore, 1956).

n.b. For many of the medical writers, I have provided information concerning bibliography and editions, as these texts are not generally as well known as others from the Imperial Latin period.

[22] Celsus' text is readily available in the Loeb series: W.G. Spencer, *Celsus. De Medicina* (Cambridge, 1935).

[23] The edition of this recently discovered manuscript is: Sergio Sconocchia (ed.), *Scribonii Largi Compositiones* (Leipzig, 1983). Useful commentary includes: Edmund D. Pellegrino and Alice A. Pellegrino, "Humanism and Ethics in Roman Medicine: Translation and Commentary on a Text of Scribonius Largus," *Literature and Medicine*

For those medical writers who recommend or prescribe this kind of treatment, such advice offers strong evidence of a belief in the powers of thermal-mineral bathing. Because so much of a doctor's livelihood rested on his reputation, it is likely that a useful and effective means to a cure would be sought and advised.[25] In other words, the recommendation for thermal-mineral spa bathing would only occur when there was a strong belief that it would be useful, or at the least, not harmful.

Another aspect in the relationship of spas with Roman medicine involves the backdrop of religious belief which existed at spas. The curative power of springs had long been recognized - a concept which had origins in the belief in the divinities associated with springs.[26] Although there seems to have been some cult activity in the

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7 (1988): 22-38; Sergio Sconocchia, "Le problème des sectes médicales à Rome," in Mudry and Pigeaud, 137-147.

[24] Most of Galen's writings extant in Greek are available in the monumental nineteenth century edition: Karl Gottlob Kühn, *Opera omnia Claudii Galeni*, 22 vols. (Leipzig, 1821-33). Editions of many texts in languages other than Greek are too numerous to include here, but several have appeared as volumes in the *Corpus Medicorum Graecorum* series. The scholarship on Galen is immense. For the most recent English translations, commentary, and bibliography see P.N. Singer, *Galen. Selected Works* (Oxford, 1997).

[25] On the role of the doctor, see Ludwig Edelstein, "The Professional Ethics of the Greek Physican," in Temkin and Temkin, 319-348.

[26] cf. J.H. Croon, "Hot Springs and Healing Gods," *Mnemosyne*, s. 4, 20, (1967): 225-246 and Chapter 8.

context of spas, this did not present a conflict with a treatment which was "rationally" based.[27] This dualism is one of the characteristics of Roman medicine: it would have been acceptable to seek a cure from both a doctor and a god; their functions were not mutually exclusive. It is, however, necessary to reiterate that although there was an undercurrent of religious belief at spas, the main healing activity focused on what was considered to be a rational use of the thermal-mineral waters.

Distribution of Spas

The abundance of thermal-mineral springs in Italy resulted in wide-spread development of spas. As might be expected, the majority of spas developed in those regions which offered the most in natural spring resources.[28] On the map showing the location of spas, a clustering of spas is evident in the regions around Rome and Naples. This is primarily due to geological conditions which created the appropriate circumstances for thermal-mineral springs. Yet, these are the areas most frequented by the wealthy inhabitants of Rome The problem, then, is whether the spas arose in these areas because of the presence of individuals seeking their benefits or whether visitors came because of the attractions of thermal-mineral water treatments. This is, of course, a difficult question to resolve. It is, however, necessary to take into account the fact that these places are those best known from both the ancient literary sources and from modern archaeological investigations. It is possible that the picture created is a somewhat distorted view of spas in Italy. Thus, because the written sources represent almost exclusively the upper classes and their movements in relation to Rome and because archaeological work has focused on some of the more central areas of Italy, spas which lay beyond this range may not yet have come to light. The evidence of Peutinger Table further suggests that the information about the distribution of spas may be somewhat biased. The presence of several spas on the map which are not known from elsewhere provides one of the more convincing indications that spas outside of the socially significant sphere of Rome may have existed. In particular, the spa at Aquae Angae, located in southern Italy, is found outside of the normal geographic areas described in the literature. In addition, there are other springs and sanctuaries which were known for their healthful properties in the south; it would not be surprising to find that some of these also had associated spas.[29]

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[27] For the presence of religion and magic in rational medicine, see Ludwig Edelstein, "Greek Medicine in its Relation to Religion and Magic," in Temkin and Temkin, 205-246; Jackson 1988, 138-169.

[28] For a discussion of the regional geography and geology of Italy, see D.S. Walker, *A Geography of Italy* (London, 1967, 2nd edition), 95-229. The main resource on the springs is the *Carta idrogeologica*, Centro di studio per la geologia dell'Italia Centrale (Rome, 1984). Alo, several recent works have surveyed the presence of springs in particular area. In Etruria, see L. Gasperini, "Gli Etruschi e le sorgenti termali," *Etruria Meridionale* (Rome, 1988), 27-35; In Campania, see B. Crova, "Le terme romane nelle Campania," *Atti dello VIII Convegno nazionale di storia dell'architettura, Caserta 1953* (Rome, 1956), 271-288.

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[29] See, for example, H. Dilthey, "Sorgenti Acque Luoghi Sacri in Basilicata," *Attività Archeologia in Basilicata 1964-1977. Scritti in onore di Dinu Adamesteanu* (Matera, 1980), 539-560.

Chapter 3

The Archaeology and Setting of Spas

Because the design of a thermal-mineral centre is closely related to its use, a study of the archaeological evidence is necessary to provide a more complete understanding of the development and function of a spa. Although extensive work has been done on the architectural form of ordinary baths, little detailed investigation has been carried out on the design of spas as a variation on normal baths. Distinguishing between the two can be difficult as many features of each tend to overlap. One of the problems encountered in a study of the establishments in Italy is that little attention has been given to outlining the key characteristics that belong to the context and architecture of a spa.[1] The problem of differentiating between spas and baths is further compounded because regular bathing establishments also played a role in health concerns.

This chapter focuses on the architectural design and components of spa complexes. By identifying significant features, it is possible both to clarify the function of a thermal-mineral centre and to distinguish between an ordinary bathing establishment and a spa. In general, one of the main archaeological features used for identifying a bath as a spa has been the presence of thermal-mineral springs. Some spas have been recognized entirely on the basis of thermal-mineral springs in the vicinity of bathing buildings.[2] While the importance of the springs cannot be overestimated, other features were also critical to the function of a spa. The most important of these was the presence of various facilities designed for the use of thermal-mineral waters. These comprised many different types of pools and basins. Other features related to the design of a spa include the setting of an establishment as well as the availability of springs in the area. Differences in location and resources created great variation in the manner in which healing complexes were designed, but all spas had the aim of maximizing the availability of cure brought about by thermal-mineral spring water treatment. Within the framework of the overall purpose of restoring health, different stages of development could occur.[3] In general, however, the formulation of a typological analysis for these buildings is a difficult task because the architectural layout was suited to the requirements of healing and, as a result, had a wide variety of design. These needs were primarily dictated by uncontrollable factors, i.e. the thermal-mineral spring water.[4]

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[1] Grenier's important catalogue of spas in Gaul provides an overview of many of their characteristics. His concluding comments, however, are focused more on the nature of the spring waters used than on a detailed analysis of the architectural form which is found in the spas in Gaul. See Grenier, 468-473.

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[2] The interpretations of the bath buildings at Agnano, Chianciano Terme, San Calogero and Teanum Sidicinum in Italy seem to have come about this way. As well, Djebel Oust in Tunisia, a site lacking known literary reference, has been identified as a spa without clearly stated reasons beyond the presence of thermal-mineral springs. For Djebel Oust, see M. Fendri, "Evolution chronologique et stylistique d'un ensemble de mosaiques dans une station termale à Djebel Oust (Tunisie)," in *La mosaique gréco-romaine, Colloques internationaux CNRS, Paris, 1963,* Paris, 1965, 157-173; M. Fendri, "Djebel Oust," *EAA* suppl. (Rome, 1970), 283-286.

[3] Yegül has identified three stages of development of thermal-mineral sites: 1) a simple pool with very few architectural features fed by a spring; 2) a more elaborate structure with a central pool-hall as its focus; 3) an integrated building which had both natural and artificially heated elements. Yegül suggests that a site might either progress through each stage or remain at a particular phase of development. It should be emphasized that these stages are not considered as distinct types. See Yegül 1992, 110-111.

Setting and Surroundings

Because an abundant supply of water was critical to the operation of the facilities, the location of a healing spa is, in the first place, dependent on the presence of thermal-mineral springs. Another important consideration is the general healthfulness of the site. Vitruvius recommends choosing a healthy spot with a spring for all gods but especially for those connected to healing when planning a new temple.[5] It is not surprising, in accordance with Vitruvius' suggestions, that spas tend to be well-situated. Many spas are in surroundings which have favourable conditions and spectacular views. One of the most popular choices of locations seems to have been places where a view of water was possible. Not only does the water provide a pleasant view, it would have also frequently furnished a cooler (and presumably healthier) climate. Such a panorama was central to the complex at Baiae where the orientation of many buildings, especially the upper porticoes and smaller chambers, is directed towards the sea. It seems likely that a similar arrangement could have been found at Aquae Sinuessanae, a spa also built in close proximity to the sea. The complex at Aquae Tauri is also situated in a locale which provides a great vantage point over the sea. The spa at Vicarello was placed on a hill overlooking Lake Bracciano. As at Aquae Tauri, there is some distance between the body of water and the establishment but the location of each spa was certainly chosen with the view in mind.

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[4] A similar observation can be made for the design of spa establishments in Gaul: "Piscines, baignoires, passages, salles de repos, apodyteria, sont chaque fois groupés d'une façon qui semble fantaisiste mais le problème, dont nous ne pouvons rendre compte, était pour l'architecte, d'amener l'eau à une température voulue et sans doute différent, à chaque piscine et aux multiples baignoires. Il ne semble pas y avoir eu de règle et il ne pouvait guère en exister." Grenier, 469.

[5] Vitruvius 1.2.7; 1.4.1; 1.4.10.

Another possibility for the setting of a spa seems to have been one which, rather than having a water view, was chosen for the general ambience and climate. Thus, Aquae Cutiliae is found in the midst of the mountains of central Italy. Because the location is at a relatively high altitude, it would have remained refreshing even in the hottest summer weather. As well, the landscape is impressive for its overall beauty. The choice of location for Aquae Vescinae, placed in the Garigliano Valley, could not have been made without some consideration given for the naturally attractive environment of the area.

There are also a number of spas which had neither a water view nor an obviously striking setting. Their location must have been determined almost entirely on the presence of the required thermal-mineral springs with scarcely any regard for the environs. Aquae Caeretanae, built on a small plateau beneath some low hills, and the Bagni di Stigliano beside a stream at the bottom of a small valley, are both placed reasonably favourably in terms of the beauty of the landscape. But neither would have received the benefits of sea breezes or mountain air. A similar situation would have been found at several other spas, including the complexes at Agnano, Teanum Sidicinum, Aquae Albulae, and Chianciano Terme. Likewise, Aquae Aponi is not placed in the surrounding hills, but at the foot of the Colli Euganei. This was apparently the most advantageous place for the use of the springs and little thought was given for the surrounding landscape.

Transport of Thermal-Mineral Water

One of the essential requirements for developing a spa was establishing a method of using the resources provided by the thermal-mineral water. Pools filled with hot water were at times cut directly into the rock surrounding the springs. Some of the earliest exploitations of thermal sources originated by placing a structure directly over the springs. This seems to have been the case at Baiae, described by Celsus as making use of the steam directly.[6]

When it was impractical to make direct use of the spring at a site, thermal-mineral water could be transported through a piping system for use within the complex. This is known from the literary record as well as from archaeology. Consider, for example, Nero's efforts to bring all the waters of Baiae together to a single pool and to have water flowing from Albula into the Domus Aurea.[7] Such a hydraulic system was maintained at Aquae Tauri. Springs which originated in the northern area of the complex were piped into at least two rooms. The pipes connecting the water sources to the basins were mostly of lead, although the excavators mention at least some terracotta piping.[8] In some cases, the distance covered by the piping could be quite considerable. At San Calogero (fig. 12, at 1), roughly-made stone channels buried under the ground brought hot water from a natural source about 650 metres from the thermal establishment. At the thermal complex at Montegrotto Terme (fig.11, at D), little indication is given in the publication concerning the transport of thermal waters from the closest spring located at least 150 metres from the building. Yet, a complicated hydraulic system formed a network throughout the structure, with at least three pipes or channels leading in the direction of the spring; it may safely be assumed, then, that the water from the source was brought by these channels to the building.[9] The carved stone conduits at Aquae Caeretanae were also able to bring water to the baths from a distance.[10]

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[6] Celsus 2.17.1.

[7] Suetonius *Nero* 31.2-3. On the project at Baiae, see D'Arms 1970, 98-99, who believes that a series of glass flasks depicting scenes of Baiae confirm Nero's building of the large pool. Three flasks show topographical details of Baiae including architectural features and oyster breeding beds. Two of the three vessels which illustrate Baiae clearly a large colonnaded building. The inscriptions on each indicate that this is Nero's pool. The first, found originally in the suburbs of Rome in the catacombs and now located in the National Museum in Warsaw, has the following inscription: (on the top) MEMORIAE. FELICISSIMAE. FILIAE. (on the body) STAGNV. NERONIS. OSTRIARIA. STAGNV. SILVA. BAIAE ... FAROS. The scene and inscription on the second is more obscure due to heavy lime deposit. The inscription reads: STAGNV NERONIS BAI...RIP...AE. For descriptions of the flasks, see K.S. Painter, "Roman flasks with scenes of Baiae and

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Puteoli," *Journal of Glass Studies* 17 (1975): 54-67. For detailed discussion of the scenes on the flasks and their relation to known topographical features, see Steven E. Ostrow, "The Topography of Puteoli and Baiae on the Eight Glass Flasks." *Puteoli* 3 (1979): 77-140.

[8] Although the use of lead pipes was quite common in baths, they must have been considered especially necessary for transport of thermal-mineral water. Perhaps lead pipes provided better conduits and were more able to handle the combination of pressure from the springs, the hot temperatures, and the minerals in the water. See A. Trevor Hodge, *Roman Aqueducts and Water Supply* (London, 1991), 113-117, 154, 308.

On the use of lead and ceramic pipes in general, see Vitruvius 8.6.

[9] Luciano Lazzaro, *Fons Aponi. Abano e Montegrotto nell'antichità* (Abano Terme, Padua, 1981), 128.

[10] The stone-carved conduits are visible at the entrance to the site.

In some cases, as at Vicarello or the complex at San Calogero (fig. 12, at 2), a collecting basin for the spring water formed an integral part of the complex. This type of layout is well-known from the development of the irregular-shaped natural basin or Sacred Spring formed at Aquae Sulis (modern Bath).[11] The Italian examples may have corresponded closely to what is evident at Bath. At Vicarello, a well (1.4 m diameter, 4.0 m depth) was formed in the volcanic rock where the hot water gushed up.[12] This well received limited development, having a partially covered vaulted roof and steps down into the pool. The exact function of the steps remains unclear. One suggestion is that they served to allow individuals to reach the spring waters for bathing.[13] However, it is certain that the spring supplied the nearby rectangular pool. In this case, it seems that the basin around the well was a deposit for votive offerings. This practice would have been similar to that at the Sacred Spring at Bath.

At San Calogero (fig. 12, at 2), an irregularly shaped basin was built into a cliff along one side and constructed out of large blocks around the remaining perimeter. The size of the pool was approximately 5.0 m in diameter and 4.0 m in depth. It appears to have remained unroofed. Hot water was channelled in from the thermal spring and collected in this basin. Again, as in the preceding example, it is not clear whether the intent of this pool was to provide a place for visitors to reach the water or to act as a kind of reservoir of spring water. Although the basin is probably pre-Roman, use of the site continued until a much later date.[14]

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[11] Cunliffe and Davenport, 1985.

[12] A plan of the ancient baths at Vicarello has not been published.

[13] Marchi, "Le Acque Apollinari e la loro stipe," *La Civiltà Cattolica*, a. III, vol. VIII, (1852): 469. (quoted in A.M. Colini, "La stipe delle acque salutari di Vicarello," *Rendiconti della Pontificia Accademia Romana di Archeologia* 60 [1968]: 40).

The Valchetta Baths in Veii (fig. 16) also had a basin which apparently collected water from the nearby hot springs. The main basin and its two reservoirs remained essentially undeveloped. These three features were cut into the bedrock near the hot springs on the eastern side of the excavated area. The two smaller basins have been determined to be tanks or reservoirs for the thermal water; the largest of the three (4.80 metres diameter) is considered the main basin and may have been used to provide direct access to the thermal-mineral water for bathers. These basins belong to the earliest development of the site and remained open-air.

Baths with Thermal-Mineral Springs in Close Proximity

One of the earliest complexes where a connection between bathing facilities and thermal-mineral springs may be postulated is Ponte di Nona. At this site, located on the Via Praenestina east of Rome, excavations in 1975-1976 by T.W. Potter brought to light a Republican healing sanctuary.[15] A small bath-house and other buildings were located nearby the sanctuary area. Although there is no direct evidence to confirm it, it may have been the case that the baths were supplied by water from the magnesium springs in the area. The likelihood of this is increased by the large number of votive deposits recovered which were clearly related to the healing function of the spring.

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[14] The chronology of the basin remains unclear due to the lack of datable ceramics from excavation, although it is likely that use continued through the Roman period, along with the other buildings of the complex. It has been suggested that the basin pre-dates the Roman use of the site. Cavalier's interpretation of the early date of the structure presumably relies on the building technique and the placement of the channels used to supply the pool with water from the spring. See, Madeleine Cavalier, "Les thermes de San Calogero à l'époque grecque et romaine," in Ginouvès 1994, 184.

[15] Tim W. Potter, "A Republican healing sanctuary at Ponte di Nona near Rome and the classical tradition of votive medicine," *Journal of the British Archaeological Association* 138 (1985): 23-47; Tim W. Potter, *Una stipe votiva da Ponte di Nona*,

The Valchetta Baths (fig. 16) were supplied by natural hot springs, yet the excavators did not link the site to any known spa functions.[16] The excavated complex included two hypocausted rooms, a furnace, and a complicated system of providing access to the thermal-mineral springs. *Opus reticulatum* facing on the walls suggested an early Imperial date for the first phases of the baths. The presence of brickwork and some fragments of *terra sigillata chiara* embedded in a plaster surface suggest a major reconstruction during the second century. The earliest use of the baths seems to have relied on the natural hot springs over which the building was constructed and on those which were collected in the nearby circular basin. Because of the juxtaposition of the baths with thermal-mineral springs, it is probable that the Valchetta Baths had a spa function.

A similar situation is found at the baths of Teanum Sidicinum (fig. 13). Here, the excavator was aware of nearby springs and of their thermal-mineral nature. Yet, no

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(Rome, 1989).

[16] The presence of the springs has not gone unnoticed. Yegül includes these baths in his chapter on thermo-mineral bathing. As he rightly identifies many of the more important spas in this chapter, it seems likely that he also conceived of the Valchetta Baths as belonging to this category. See Yegül 1992, 116-117.

evidence or suggestion is given that the baths were in fact supplied by the springs. Only two rooms can be identified with some degree of certainty as having a bathing function: 1) an elaborately decorated hall (A) containing a 6.50 m x 4.20 m basin (B) with a depth of 1.30 m; and 2) a small heated room (C). The first room was identified by the excavators as a *frigidarium*, the second as a *laconicum*. It seems likely that the complex functioned as a spa because of the presence of the mineral springs. The bath was most probably placed in this particular locale to take advantage of the properties of the spring. It is possible that this is the site called *Acidula* by Pliny and identified by Caelius Aurelianus as being good for curing stones.[17]

Architectural Features

Rooms for immersion and/or swimming

The most characteristic architectural feature of a spa is the presence of pools and pool-halls for using thermal-mineral waters. Nearly all spas had at least one large pool supplied by thermal-mineral waters.[18] The dimensions and shape of both the pool and the pool-hall vary but the most common form was rectangular. These pools, while certainly related to those found in regular baths, have features that are specific to the function of the spas.

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[17] Pliny says that the spring is located about four miles from the town (*HN* 31.5). The excavated baths lie outside of the town. See Houston 1992, 363.

[18] Yegül 1992, 110-111, identifies these pool halls as characteristic of spas.

At Aquae Tauri (fig. 15), a number of rooms contain pools which should be considered typical of the type of pool-hall found at spas. One of the most prominent rooms is located in the north area of the site (Room B, see fig. 21). The overall dimensions of the room are 14.25 m x 10.12 m. It contains a rectangular pool that measures 11.50 m x 6.40 m with of depth of 1.30 m. Two sets of steps provide access to the pool (not shown in fig. 15): four small steps are located in the middle of the south end of the pool (visible in fig. 21), three larger steps are found along the length of the north side. A bench measuring 40 cm high and 40 cm wide was placed around the walls at the bottom of the pool. At the north end of the room is a small apse. This apse was a major focus of the room, serving as the outlet for thermal-mineral water brought in through lead piping and having a niche which probably had a shrine dedicated to divinities associated with the spring. The hydraulic system through which the hot spring water flowed was located underneath the floor of the room. One fragment of pipe which was recovered has an internal diameter of 10 cm. Originally, columns surrounded the entire pool; these were later replaced on the east side by square piers that may have supported a concrete barrel vault roof. There is only a narrow walking surface between the columns and the walls of the room. Eight small marble-lined basins were placed between the columns and piers. The basins were 1.03 m x 0.45 m with a depth of 60 cm. Each was connected to the main pool by a small pipe which served as a drain for the smaller tubs. The function of these small tubs is not clear, but they may have been used for individual bathing. Alternatively, they may have been part of a system of adding water to the main pool in an effort to achieve a pressured or showering flow of water.[19] The pool itself, including the walls and bench, was covered with white marble, while the overall decoration of the room was an elaborate arrangement of black and white mosaic floor, giallo antico marble revetment on the walls combined with a socle of white marble and a cornice of red plaster, and piers also revetted in marble at the bottom and stucco at the top.

Another hall in the same complex also conforms to the normal plan of pools found at spas. Room C is completely dominated by a large rectangular pool, centrally placed (fig. 18). The room measures 11.70 m x 23 m. The pool is 9.30 m x 20.20 m with a depth of 1.17 m. Five stairs on the western side permit entry in the pool while a bench with a height of 40 cm is located at the bottom of the pool along the three remaining sides. Instead of a single apse at one end, a series of nine alternating rectangular and semicircular niches surrounds the room. Hot water was supplied from the spring by two large lead pipes (diameter approx. 35 cm) placed in the floor of the pool. The room was roofed by a cross vault. A well-preserved tripartite glazed window in the upper wall on the east side of the room provided light (fig. 19). Similar windows were found in the north and south walls. Just as in the other large pool hall at the complex, the entire pool was covered with white marble, traces of which still remain *in situ*. Dating of the complex has relied largely on building technique. The west section of the building is built mostly in *opus quasi-reticulatum* and is therefore dated to the 1st c. B.C., although renovations to the pool-hall may be Hadrianic.[20] The pool-hall on the east side is constructed in *opus testaceum* and is considered a later 2nd c. A.D. addition.[21]

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[19] The size and shape of the tubs recall the Greek hip-baths as found at Gortys or Megara Hyblaea which have an Italian counterpart in the public baths at Gela, the early phase of the Stabian Baths in Pompeii, and the baths at Tolve. In these baths, it was common to have water poured over the bather; perhaps this should be considered for the Aquae Tauri tubs. For the relationship of Greek baths and early Roman baths, see Janet DeLaine, "Some Observations on the Transition from Greek to Roman Baths in Hellenistic Italy," *Mediterranean Archaeology* 2 (1989): 111-125.

The pool halls at Aquae Caeretanae (fig. 4) have several features similar to those found at Aquae Tauri. Two large rooms comprise the main area of the complex: 1) a long, single-apsed room with a central pool and 2) a rectangular pool room adjoining the first on the west side. The relative proportions of the apsidal room (22.30 m x 12.50 m) and its pool (ca. 20.0 m x 7.0 m)[22] are similar to those of Rooms B and C at Aquae Tauri. However, at Aquae Caeretanae the design of the pool mirrored the shape of the apsidal hall, ending in a semi-circle at the short southern side. On the straight side of the pool, four smaller steps facilitated access into the water. Along the remaining sides, three large steps lined the pool; these were too large to function easily as steps and must have served primarily as benches. Water from a centrally-placed lead pipe may have been used to fill the pool, although there is evidence that different hydraulic systems were used throughout the history of the complex. Twelve piers, six on each side, were placed along the length of the pool forming a narrow portico. Lead pipes with bronze fittings protruded from each pier and provided fresh cold water for mixing with the thermal-mineral water. This created a dramatic effect of pouring water. Another pipe located in the floor of the pool may have brought cold mineral water in to mix with the hot water from the spring. Although the exact roofing system is not clear, wooden beams and tile fragments with mortar were recovered from the interior of the pool. It may be the case that this pool was an open-air pool with a partial tile covering around the colonnade. White marble revetment covered the brickwork of the entire room and the floor was made of mostly black-and-white mosaic although some coloured tesserae also suggest that a polychrome mosaic may have existed as well.

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[20] Masonry and building technique can, at best, only provide rough guidelines as evidence for dating. For the origin and diffusion of *opus reticulatum*, see Mario Torelli, "Innovations in Roman construction technique between the first century B.C. and the first century A.D.," *Studies in the Romanization of Italy* (Edmonton, 1995), 213-245. Also, J.P. Adam, *Roman Building* (Bloomington, 1994), 125-157.

[21] Hadrianic brickstamps: see R. Mengarelli, "Civitavecchia. Scavi eseguiti nelle "Terme Traiane" nel territorio di Civitavecchia," *NSc* 16 (1919): 213-216; R. Mengarelli, "Civitavecchia. Scavi eseguiti nel 1922 nelle Terme Taurine o Trajane," *NSc* 20 (1923): 348.

[22] The published dimensions of the pool are in fact 10.0 m x 7.0 m; this must be an error and I have adjusted the measurements according to the size indicated by the plan.

The second pool room was placed at a right angle to the larger apsidal hall. A single small entrance way provided access between the two rooms, although two other doors were blocked off, presumably at the time of the construction of the second pool. As in most spas, the pool itself (10.70 m x 5.40 m) takes up most of the surface area of the room (13 m x 7.40 m). Around all sides of the pool was a series of steps which served both as access and as a bench. Three pipes supplied the pool with hot mineral water, cold mineral water, and cold fresh water. Two were made of lead; the third was a ceramic pipe. The excavators have not reported any evidence for roofing, but it is likely that the entire space was covered, as the span is not very large and could have been enclosed with ease. Just as at Aquae Tauri, dating of the baths has been determined in large part by building technique. The use of *opus reticulatum* in several walls and *opus* *spicatum* for floor surfaces (below later marble paving) has suggested an early Imperial date.

At Aquae Vescinae (fig. 3) an abundance of thermal-mineral springs with different properties facilitated the development of an elaborate complex. The main pool hall (1) is located to the east of the main atrium (2). In the center of this room, measuring 16.50 m x 9.80 m, a pool with a length of 11.60 m and a width of approximately 5.0 m was situated. Four steps surrounded the entire pool. The room was lined with marble. Water entered by means of a pipe located in the bottom of the pool. A door on the south wall of the room provided entry to another pool room. This room was smaller and was occupied almost entirely by a marble-lined basin, measuring 6.80 m x 4.25 m. Along the north side of the pool, three steps were placed to enable access. The arrangement of the two rooms recalls that of both Aquae Tauri and Aquae Caeretanae.

Another large hall was found on the north-east end of the complex (3). Although the room itself is rectangular, the pool has an irregular plan. At the far end of the room, seven small basins were constructed. These were possibly intended for individual use. It is difficult to determine whether any of these halls was roofed, but given the relative thickness of the walls (approx. 1.5 m), it is likely that some kind of vaulting provided covering. Dating of the site remains conjectural. The springs at the baths were probably known to Pliny the Elder.[23] The building technique included *opus incertum* for the retaining wall on one side of the complex and *opus reticulatum* for a circular sweating room (described below). Although neither building method is clearly datable, it is possible that they could have existed together in the late first century. In any case, the locale was known in the third century, as several inscriptions attest.[24]

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[23] Pliny *HN* 2.106.227.

Several of the bathing complexes known in the area of Aquae Aponi can be described as typical in their overall pool hall plan. Unfortunately, due to the poor state of preservation, it is difficult to be precise about the archaeological remains of these rooms. It is, however, clear that they have many recognizable spa features. In the the town of Montegrotto Terme (fig. 11a), two rooms of the main bathing complex have large rectangular halls with thermal pools. One pool (A) measures 26.0 m x 14.0 m and was situated in a room with an apse on one of the short sides. The other pool (B) measures 37.5 m x 16.0 m and echoes the double-apsed shape of the room in which it was built. In the corners of each of the pools, small steps were placed. Both of the rooms were covered with marble revetment; much of which was removed from the site during the 1700's. Spring water must have been transported through lead pipes, fragments of which were found in the 1965 excavations. An elaborate system of hydraulics (D), including water supply and drainage, formed part of the complex. The presence of *opus caementicium* and *opus reticulatum* suggests a Late Republican or early Augustan phase of development. This was followed by restoration and enlargement of the site in the Antonine period, as is indicated by masonry in *opus latericium*, and by the discovery of two lead pipes with the name Arria Fadilla, the mother of Antoninus Pius.[25] A possible rebuilding occurred during the reign of Theoderic, as suggested by a letter of Cassiodorus (*Var.* 9.6).

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[24] Giulio Giglioli, "Note archeologiche sul Latium Novum," *Ausonia* 4 (1911): 49-50 = *AE* 1914, 217; Paul Arthur, *Romans in Northern Campania* (London, 1991), 105, no. 2; *AE* 1982, 153; 1989, 144, 145.

[25] Lazzaro, 214-216.

Another bathing complex located at the foot of the Colle Montagnone to the west consisted of two pools fed by thermal-mineral springs (fig. 11b).[26] One of the pools was constructed in brick and measures 26.70 m x 8.60 m. One of the short sides ends in an apse and the opposite end has four steps. A bench lines the interior of the pool. The entire room may perhaps have been covered with marble. Lead piping conducts water directly into the pool from a spring known as "Lastra". Fifty metres away, a second rectangular pool was found. This pool was smaller and deeper and was connected to the first by a long channel.

Two examples of baths which have a circular plan are also known in this region. The first is located at the foot of Colle Montagnone to the north-east and must have been part of a much larger complex.[27] The basin was constructed of stone quarried from a nearby hill.[28] To judge by coins found in its vicinity, the small pool could not have been built until after Tiberius and its use may have extended through the whole Roman period. Various types of coloured marble revetment and glass mosaic tesserae were recovered from the area. Although the site has been long known, little work or investigation has been done to provide basic information on the pool itself. Yet its nearness to a thermal-mineral spring and its shape are factors which lead to the identification of the bath as one of the healing establishments in the region.

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[26] *Delle antiche terme di Montegrotto*, Città di Montegrotto Terme, Soprintendenza Archeologica per il Veneto (Montegrotto Terme, 1997), 22-25. For the two pools supplied by water from the "Lastra" spring and the circular pool at the foot of Colle Montagnone, detailed plans have not been published.

[27] Lazzaro, 97-98.

[28] Virtually no details about the architecture of this pool are reported and it is no longer visible. It is described by Lazzaro as a "grande bagno" and part of a large complex which apparently covered an area of 160 x 46 feet.

The second round bath in the same area is part of the main thermal complex at Montegrotto Terme (fig. 11a, C). Situated between the two large rectangular pool halls, a smaller circular chamber contained a round pool. The diameter of the marble-covered pool is 12.0 m and there are stairs on one side for entry. The published plan is unclear as to how water entered the room, but it is probable that the pool was connected to the overall network of piping through the complex.

The large room at San Calogero (fig. 12, 3) fits in well with the interpretation of the site as a healing centre and with the general pattern of pools at healing spas. A pool is located in the centre of a large room (9.30 m x 4.20 m). The pool was built so that it would directly receive thermal-mineral waters; a grotto with a spring is located in close proximity and would have provided extremely hot water. This hot water flowed in with a striking rush, perhaps achieving a similar effect to that at Aquae Caeretanae. Entry to the pool was made possible by four steps surrounding the entire structure; just as in other cases, these steps would have also served as a place for sitting. The entire room may have been covered with a timber roof, fragments of which have been found. Large slabs pave the bottom of the pool. The use of the hot springs in the area continued for a long duration. Pottery from the 4th-3rd c. B.C. has been found in a channel dug to provide access to the springs. The construction of the large hot pool in *opus quadratum* with walls of *opus incertum* is not sufficient to date the structure accurately, but it is likely that it belongs to the early Imperial period. Coins of the 4th century A.D. found in a destruction level provide an end-date for the establishment.

The large pool at Terme di Cotilia (fig. 14, A and 22) provides strong support for the belief that this location was in fact the site of Aquae Cutiliae. The pool measures 60 m x 24 m and is situated in the centre of a large terrace. Along the northern and western sides, a façade (B) consisting of a series of rectangular and apsidal niches is preserved, in some places up to a height of 5 m. A complicated hydraulic system which made use of thermal-mineral waters supplied water to the complex. These structures have been shown to be part of an elaborate nymphaeum (C). The pool itself is accessible by means of at least four small double staircases consisting of five steps each (fig. 23). The depth of the pool is 1.80 m. There was no evidence for a bench along the sides of the pool. During excavation of the pool, fragments of marble revetment and marble columns were found. Although it is not clear how water entered the structure, a drain built underneath the steps is visible on the east side. Building technique of *opus incertum* and *opus quadratrum* together with ceramic and glass finds places the structure in the early Imperial period. African Red Slip lamps from the fourth century provide a cut-off date for the use of the complex.

In some cases, the presence of a large central pool provides the main indication of a site's function. The minimal amount of archaeological evidence available for the Roman structures at Vicarello restricts what can be said about buildings on the site. Yet it is apparent from the mid-19th century description provided by G. Marchi that a large rectangular pool was visible in association with a well which made use of thermal-mineral waters. A further example of this type of room is found at Aquae Statiellae (fig. 1). Despite limited excavation of the site, enough was done to make a general plan of a room which had a large rectangular pool measuring 17.5 m x 10.5 m. Three steps on all sides of the structure provided access. The pool was constructed in *opus signinum* covered with marble veneer, fragments of which still exist in place. Excavation inside the pool recovered brick tile and additional marble fragments including more revetment, a cornice, part of a capital, and pieces of floral decoration. At Aquae Albulae, the remains of a large rectangular pool confirm the use of the springs in antiquity (fig. 17). Finally, at Chianciano Terme a large pool measuring 40 m x 25 m has been excavated. Spring water continues to fill this pool. The size of the pool and the presence of a spring give support to the possibility that the buildings recently discovered are part of a thermal-mineral bathing complex.[29]

* * *

The presence of a large pool hall which contained a pool for thermal-mineral water is a very significant feature of a spa site.[30] The large dimensions of the main pool halls highlight the importance thermal-mineral bathing had for therapeutic measures. The most common form for these pools is either rectangular or apsidal, but round pools offered a variation on the traditional shape.[31] Often, as at Aquae Tauri or Aquae Caeretanae, a greater feeling of grandeur was created by a substantial colonnade. The size and capacity of these rooms facilitated the most advantageous use of the hot springs which were essential to the purposes of a spa. The display of water pouring or gushing in was perhaps intended as much to impress as to provide therapeutic treatment. The centrality of these halls is further emphasized by the quality of decoration and ornament. Elaborate marble veneer and mosaics not only served practical functions but also were an indication of luxury and comfort. Other decorative elements, including the many niches and apses which may have contained sculpture, the stucco and paint work, and the worked marble cornices and columns, all added to this opulent atmosphere.

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[29] Detailed information about this site awaits future publication by David Soren who has generously provided me with his current interpretations. His findings were recently reported at the Annual Meeting of the Archaeological Institute of America, Chicago, December 1997, in a paper entitled "Archaeological Excavations at Chianciano Terme."

[30] The symbol used on the Peutinger Table underlines the importance of immersion bathing at spas. The illustrator of the Map intended the vignette to be understood as a spa, and in order to do so, used the most characteristic and recognizable feature of a spa as a representation of the entire establishment. The square courtyard is therefore an image of the main pool hall found at the majority of spas. The blue colouring in the centre of the courtyard represents the large immersion pool filled with thermal-mineral water, an absolutely essential component of a spa bath. See Appendix 2.

While there is not clear evidence about the roofing of many of the large pool halls, it seems likely that some of them were enclosed while others remained open. This seems likely especially in light of Caelius Aurelianus' advice. He says one should avoid swimming in open air in order to prevent a chill, the implication being that the choice of a closed pool is appropriate. (1.1.42) Yet, Caelius Aurelianus' advice also suggests that open air pools were available; he recommends swimming and sun-bathing with the head covered to avoid a burn (1.4.111).

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[31] In Gaul, at least 25% of the sites identified by Grenier 1960 have a large round pool. These include Evaux, Néris, Bourbon-Lancy, and Les Fontaines Salées. Also to be mentioned is Sanxay. See A. Grenier, *Manuel d'archéologie gallo-romaine. Quatrième partie* (Paris, 1960). Another comparison can also be made with the round pool at Djebel Oust in Tunisia.

There are other features in these pool halls which had a function in a thermal-mineral complex. Steps which lined the interior of the pool often provided access to the water. It seems likely that the placement of steps in spas influenced the designs of normal bathing pools. In Italy, pools which are heated artificially commonly have such arrangements.[32] It is clear that the function of the pool affected the arrangement of the steps. Whether the pool contains thermal-mineral water or simply heated water, the steps are designed to create comfort and pleasure. A series of steps around the edge provides both unhindered access and an easily reached place for sitting and soaking. Three or even four steps make it possible for the bather to vary his or her position or the depth of the water in which he or she is immersed.

Benches and ledges allowed a place for sitting in the water in order to facilitate soaking and long-term immersion. These should be considered as a regular feature in spas and are found in spas outside Italy.[33] Benches of this kind allowed a bather to relax while undergoing hydrotherapeutic treatment in much the same way as steps.

Smaller tubs, presumably for individual use, were clearly intended to provide a variety of treatments with the thermal-mineral water. In addition to the large communal baths found at spas, either rectangular or round, other baths were sometimes available to accommodate individual needs. In some cases, these more private baths are essentially indistinguishable from the tubs normally expected at a bathing establishment. Thus, at Baiae, many small tubs which would have contained hot spring water are placed throughout the various bathing facilities in the excavated portion of the hill complex. Likewise, at Aquae Tauri, smaller pools are found both in the main pool halls and in entirely separate rooms. The irregularly shaped pool hall at Aquae Vescinae had a number of smaller basins as well. A similar arrangement is not unknown in spa architecture of other regions. At the spa in Amélie-les-Bains in Gaul, twelve small chambers with individual basins surround the large central rectangular pool, and, in Tunisia, at the little published site of Djebel Oust, a series of small rooms with tubs surrounds the main pool hall.[34] While the design of these rooms affords considerably more privacy that at Aquae Tauri, the overall purpose is the same - to provide facilities necessary for all possible treatments related to thermal-mineral water.

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[32] *cf.* Suburban Baths at Herculaeum (Nielsen 1990, 7, Cat. 39), 3 steps all the way around the *calida piscina*; Velia, Vignale Baths (Nielsen 1990, 9, Cat. 52) steps at one end of the *calida piscina*; Small baths in Villa Adriana, Tivoli (Nielsen 1990, 9, Cat. 55) steps on three sides of the *calida piscina*; Bagni di Nerone (Massaciuccoli, near Pisa) (Nielsen 1990, 10, Cat. 61), steps around three sides of the *calida piscina*; Heliocaminus Baths in Villa Adriana, Tivoli (Nielsen 1990, 9, Cat. 56), corner steps in the *natatio*.

[33] The thermal-mineral pool at Gafsa in Tunisia, with steps in only one corner, displays traces of a stone bench attached to three sides of the walls. The pool has not been fully published and my information results from personal observation during a visit in 1995.

Rooms designed for sweating

Another feature of a spa which should be highlighted is the presence of chambers designed specifically for sweating. Although these rooms were also commonly found in ordinary baths, the method of heating in spas often relied on natural resources rather than artificial heat. Rooms of this type could be heated either by using hot spring water directly or by tapping into a spring and transporting the steam itself. Shafts were dug deeply into the ground to reach the hot springs and steam.[35] The steam could either be used directly to create a vapour bath or indirectly to heat a room by passing the hot steam through the walls or under the floor. Vitruvius, Dio Cassius, Seneca, and Cassiodorus each provide descriptions of this method of heating a room by means of natural resources resulting from exploitation of hot springs.[36]

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[34] Amélie-les-Bains: Grenier, 409. Djebel Oust: Fendri 1965.

An example of a room which made use of thermal-mineral spring water to induce sweating is found at Aquae Tauri (fig. 15 and 20). Room W, identified as a *laconicum* by the excavators, is a circular room with a central round pool. The room measures 6.50 m in diameter and contains a small pool 3.05 m in diameter. The pool has six steps leading into it with a marble-covered bench (44 cm high) around the interior wall of the pool. Thermal water flowed in from a lead pipe and drained out through another pipe placed at the bottom of the basin. Another bench, made of travertine, was placed around the walls of the room at a height of 40 cm. The room was originally decorated with light blue plaster, traces of which have been found. According to the excavators, this small chamber was roofed with a vault.

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[35] Nielsen 1990, 21. The system of heating a room by passing hot water under a floor in an arrangement similar to the standard hypocaust system is also possible. However, the hot water would have to have had a very high temperature to be effective. See A. Grenier, 408 for a concise discussion of the possibility of using hot water in this manner at Aix-les-Bains. Also, very hot water is still employed to heat a room at modern spa facilities in Italy. At the Bagni di Stigliano, the "grotta" is a series of underground ancient rooms which are still in use and which are entirely heated by water rising from a sulphur spring. The temperature of the water is 59°C and the temperature of the room is maintained at 49°C.

[36] Cassiodorus *Var.* 9.6.5; Dio Cassius 48.51.1-5; Seneca *QNat.* 3.24.3; Vitruvius 2.6.2.

At San Calogero (fig. 12, at 4), the so-called tholos seems to have served a similar function to the room found at the Aquae Tauri. A small domed structure (4.2 metres at base) which was originally round in shape received a supply of hot mineral water from a system of pipes and channels. The building seems to have been a sweating room for the baths; channelled-in thermal water which ran around half of the interior circumference of the chamber provided steam. A square basin (5), possibly built in the Roman period, occupied the centre of the room; this feature may have been used for mud baths, although the explanation of this function is not altogether clear, and it may in fact have been another pool containing thermal-mineral water.

Only a brief mention of the circular room at Aquae Vescinae (fig. 3, at 4) is possible as the chamber was not excavated fully. The room was thought to be a *"calidarium"* by Giglioli, a belief apparently held entirely because of the shape of the room. It was nearly 8.0 m in diameter and was almost certainly vaulted. To judge from its circular shape, this room may have been a sweating room. If the room was in fact a hot room, it is, unfortunately, impossible to ascertain the method of heating it as there is no mention in the archaeological report of either a connection to a hot water spring or of a hypocaust.

Another method of creating a sweating room at a spa was to heat a room by means of steam or vapours given off from a hot spring or volcanic gases. This was the manner of heating found at the thermal baths of Agnano (fig. 2). Two rooms in the complex have been identified as naturally heated. On the wall of the semicircular Room E, a large round hole in the wall provided an entry point for hot vapour into the room.

Hot vapour seems to have also circulated under the floor. In Room F, a circular room, hot air flowed only beneath the pavement. It appears that the first room provided a moist or dry steam-bath while the second room supplied dry heat alone.[37]

A small Roman room located at the Terme di Suio near Castelforte is another example of this system of heating.[38] The walls of the room are constructed in brick-work. The room is round with a diameter of approximately 2.50 m and a height of approximately 4.00 m. The roof is complete, vaulted, and has a few outlets for ventilation, but the construction suggests that it almost certainly belongs to a later phase, probably replacing an early vault. In the centre of the "floor" a small outlet (6 cm diameter) provided an opening for vapours to pass. This vapour probably circulated under a floor which is no longer preserved; traces of a floor support are evident 8 cm above the bottom of the room. At 50 cm from the bottom, fragments of a ledge which may have supported a bench are preserved. Two niches in the walls may have held decorative elements for the room.

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[37] The same practice continues today at Agnano, where the modern establishment of S. Germano is renowned for its chambers of natural dry heat created by volcanic gaseous emissions. The vapours piped into the Stufe di S. Germano create an intense heat, with temperatures ranging between 40° C and 70° C.

[38] The small structure is located on the property of the modern spa, Terme Caracciolo Forte. I happened upon it during a visit to the village and, to the best of my knowledge, the site has not been published. During recent work to locate a new hot sulphur spring for the modern spa, numerous Roman columns were discovered. Earlier building activity had produced a 4th-6th century African Red Slip lamp and a small amphora. This evidence confirms that the site was used in the Roman period.

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Some of the rooms described above have been been identified by excavators and scholars in terms which are regularly applied to ordinary bath buildings. These include *laconica* or *caldaria*. There is also a tendency to call sweating rooms *sudatoria*. According to Nielsen, a *laconicum* was a small, round chamber with a centrally-placed heat source.[39] Its function was to provide dry heat for sweating, although steam could be produced by pouring water on the central fire. On the other hand, Nielsen identifies a *sudatorium* as a room heated by its own *praefurnium* with a hypocaust system. The function was the same as that of a *laconicum*. She rejects the notion that a *laconicum* was a dry-air bath and a *sudatorium* was a steam bath.[40] Nielsen also points out that a steam-bath could be achieved in a *caldarium*[41] and that if a pool was present in a room such as a *laconicum*, it would, by definition, become a *caldarium*. In contrast to this, Yegül believes that there is no real distinction between the two types of sweat-rooms and that the discussion which has arisen on the topic is actually one about vocabulary rather than function.[42]

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[39] See Nielsen 1990, 158-160; cf. Vitruvius 5.10.5.

[40] Yegül 1992, 493.

[41] It seems unlikely that a steam bath could be taken in a so-called *caldarium* or heated pool hall at a spa because typically the room which contained a thermal-mineral pool was too large a space to create such an effect.

[42] Yegül 1992, 383-389. For further discussion on this problem, see N.G.R Brundrett and C. S. Simpson, "Innovation and the Baths of Agrippa," *Athenaeum* 85.1 (1997): 222; DeLaine 1993, 353.

The need for a cautious approach in bath terminology is particularly apparent in discussions of sweating rooms in spas.[43] The terminology established for ordinary bathing (even if it is generally acceptable) is often not appropriate for describing spa facilities. The small circular room at Aquae Tauri makes this evident. In this case, the heat source, a pool, is centrally placed. The thermal water, however, differs greatly from the typical heat source found in a *laconicum* which is usually a brazier, fireplace, or hot stones. Furthermore, I am not convinced by Nielsen's argument that a pool placed in a sweating room creates a *caldarium*; although this is the situation at Aquae Tauri, the form of both the pool and the room seems to indicate a function unique to healing spas. It seems likely that a small circular room with a hot pool could have had two purposes: as a steam room and as a hot thermal bath. No terminology from the written sources has come to light which is appropriate to a room with this function. It seems necessary to avoid using the general bathing vocabulary, itself fraught with misunderstandings and misapplications even when discussing ordinary baths. It is therefore specially appropriate to avoid using Latin (or Greek) words to describe the rooms or features of a spa.

While not all spa establishments have clear evidence for sweating rooms dependent on natural hot springs, it is clear that their use formed part of the therapy expected to be available at one of these centres. The use of springs or vapours to heat a room to sufficiently high temperatures was part of the desired treatment. These sweating rooms are recognizable both by their generally circular plans and by the supply of hot water or steam. Although the form of the chambers does not differ significantly from rooms identified with the same function in ordinary baths, the method of heating was central to their healing purposes. The minerals present in the spring water itself were considered to be part of the curative process. These rooms throw light on several texts which describe the use of natural steam or vapours as part of the healing procedures.[44] Such sweating rooms combine an architectural form usually connected with the perceived healthful benefits of sweating and a heating system designed to take advantage of the medicinal effects of the thermal-mineral waters.

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[43] See R. Rebuffat, "Vocabulaire Thermal," in M Lenoir, ed., *Les Thermes Romains* (Rome, 1991), 1-32.

Addition of Artificially Heated Elements

In addition to bathing facilities which made use of naturally heated spring water, a number of spas also had artificially heated rooms. These rooms are sometimes later additions to the original core of the structure and functioned alongside the already-present thermal baths.

At Aquae Tauri (fig. 15), an extension to the 1st c. B.C. bath complex was carried out during the Trajanic period.[45] One of the main purposes of the additions must have been to create a bathing suite which operated according to established patterns of bathing. The result was a series of rooms, placed in parallel rows, which follow more typical bath-building plans. After passing from the entrance of the complex through a number of rooms (entrance: 7, 6), a hypocausted room heated by two furnaces was reached (5). Two other heated rooms were available as well: (4) and (8).[46] (8) did not have a directly associated furnace and may have been kept at a lower temperature. It did, however, have a small plunge-bath with fresh-water which may have been heated by a furnace in a service room (S). Another fresh-water pool (P) was available as well and unlike most of the other rooms of the complex, was almost certainly open-air. Other rooms which may have served as places for resting, changing, or anointing were also provided (1, 2, 3). Another period of renovation and enlargement occurred in Hadrianic years, but changes at this time focused on the thermal-mineral pool halls.

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[44] e.g., Caelius Aurelianus *Chron.* 3.5.73; 3.8.112; Galen *De san. tue.* (Kühn, VI.423).

[45] Brick-stamps dated to this period: See above footnote 21.

The earlier stage of the Valchetta Baths (fig. 16) relied entirely on the springs.[47] This phase was followed by later modifications which created a hypocaust system. A hot room, called a *caldarium* by the excavators, complete with at least one plunge bath, was heated in typical fashion with a floor suspended on piers by hot air from a furnace. A second room, the *"tepidarium,"* was also added. This may have had two baths, one in each apse. The later changes most likely belong to the Antonine period.

At Agnano (fig. 2), although the thermal-mineral resources played an important role in the operation of the baths, artificial heat also was needed. It appears that the main core of the bath complex was constructed in the Hadrianic period. This included the

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[46] Yegül 1992, 115 misidentifies this room as a *frigidarium*, as suggested in the 1923 publication by Mengarelli (324). The subsequent 1933 publication (406) by Bastianelli, of a hypocausted floor, makes it clear that the room was heated.

[47] The use of the circular basins which collected water from the hot springs has been linked to the remains of the earlier structure. A late Augustan or Tiberian date has been offered for the original building. This has been determined largely on building technique and historical circumstances. See G.B.D. Jones, "Veii: the Valchetta Baths ('Bagni della Regina')," *PBSR* 27 (1960): 68-69.

frigidarium C and its two basins, and several heated rooms (D, E, F, G, H, L, M). A series of additional rooms which probably functioned as various changing rooms and rooms for annointing, was added later. The only room in the complex which was heated directly by a furnace was H, a rectangular room with an apse at one end. The remaining heated chambers (D, E, F, G, L, M) were heated by natural steam emitted from the earth.

A similar arrangement seems to have occurred at Aquae Vescinae (fig. 3). In addition to the rooms containing thermal-mineral pools, a series of rooms on the north-west side of the building have been identified as a hypocausted *calidarium* (5) with a *praefurnium*, a *tepidarium* (6) with two basins and a hypocaust, and a *frigidarium* (7). Two other sites can be added to this inventory of artificially heated bathing rooms, both of which, to my knowledge, have not been fully published. At Aquae Caeretanae, I noted the presence of a series of artificially heated rooms complete with a furnace and flue-tiles lining the walls (location shown at A in fig. 4). At the complex of Aquae Cutiliae, there appears to be a small bathing suite, possibly a heated room, to the north-east of the main buildings (beyond the area shown on fig. 14).

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The conversion from bathing complexes which relied on naturally hot water to those which had a combination of natural and artificial heat signified an important development in spas. Yegül remarks that "the appearance of artificially heated bathing facilities in an unheated bathing establishment may reflect a change in taste in bathing during the early second century after Christ, in favor of higher temperatures."[48] It also seems apparent that hotter baths were able to be achieved with the advent of the standardized hypocaust system.[49] Yet, it is not the case at spas that the earlier thermal-mineral facilities went out of use. Instead, there is a continuation of interest in the natural resources provided by the thermal-mineral springs. The presence of ordinary bathing rooms together with thermal-mineral baths indicates that the use of actual spring waters for bathing had as much to do with the properties of the water itself as with the practice of hydrotherapy. While different facilities could be made available in spas, it always remained the case that the water was the most important aspect of treatment. The addition of artificially heated baths is part of the growing interest in bathing and the wider acceptance of hydrotherapeutic methods.

There has also been discussion about the role thermal baths had in the general development of artificially heated bathing for the Romans.[50] It is likely, as Nielsen points out, that the presence of large warm baths in the thermal spas influenced the development of similar baths in other contexts. In normal bath buildings, primarily due to economic concerns, hot or even warm pools tend to be small.[51] As the practice of spa bathing took hold and spread, some interest in building large heated pools seems to have also developed. There are examples of large artificially heated pools, but these are, on the whole, rather rare and tend to be restricted to luxurious establishments.[52] These baths represent an effort to re-create some of the effects of the naturally heated water by means of artificially heated water, although the full healing scope of spas could not be entirely imitated.

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[48] Yegül 1992, 116.

[49] On the transition from Greek to Roman preferences and methods of bathing, see DeLaine 1989; Nielsen 1985.

[50] Nielsen 1990, 48; DeLaine 1989, 122-123; Bice Crova, "Le terme romane nelle Campania," in *Atti dello 8. Convegno nazionale di storia dell'architettura, Caserta, 1953* (Rome, 1956): 271-288; I. Sgobbo, "Terme Flegree ed origine delle terme romane," in *Atti del I Congresso nazionale di studi Romani I 1929* (Rome, 1929), 283-328.

General Design Considerations

It is evident that many different options were available to those seeking care at thermal-mineral centres. These were provided by the multiplicity of baths available and by the other types of rooms included in the complexes. In order to facilitate a certain flexibility in the use of the rooms, spas were not designed according to patterns of layout and traffic flow. Rather than adhering strictly to the normal order of bathing, *i.e.* a hot bath followed by a transition to a warm space or bath and finishing with a refreshing cold bath, movement through rooms in a spa could be varied according to the desires and needs of the user.[53] Adaptability in a spa was largely accomplished by having several means of communication between parts of the complex.

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[51] Heating water is an expensive endeavour, both in terms of supply for wood to operate the furnace and space which needed to be given over to this purpose. On the costs of fuel and operating baths, cf. H. Blyth, "Economics of Public Baths," *Balnearia* 2, no. 3 (1995): 2-4.

[52] These pools were heated by means of a hypocaust. cf. the Vignale Baths at Velia, Suburban Baths at Herculaneum, Small Baths in Villa Adriana at Tivoli, and Bagni di Nerone at Massiciuccoli. For catalogue references of these baths in Nielsen, see above footnote 32.

The clearest example of this type of versatility is found at Aquae Tauri (fig. 15). The earlier pool hall (B) in the western Trajanic core of the establishment was accessible from different directions. To the south, a door led to another chamber (F) with a mosaic-lined pool; to the west, Room D with a smaller pool was reached by a small corridor; and finally, when the later Hadrianic addition (C) was added to the east, communication between the large halls (B and C) was easily facilitated by the many openings between the columns and pillars. It is also worth noting that the thermal baths could be used either in conjunction with or independently from the later bathing-suite. The architecture did not dictate the way a visitor was meant to use the baths. A similar arrangement was available at Aquae Vescinae where a visitor could make a choice of pools according to need rather than following through a set pattern. Just as at Aquae Tauri, either the natural or the artificial baths could be used as needed.

While the goal of creating an architectural plan that could respond to all types of therapeutic needs was certainly important, other factors influenced the layout of a complex. The location of the actual thermal-mineral springs used to provide treatment was a significant factor in determining the plan of the bath. The organization of a spa centred on the need to have at least one large hot water pool hall as the primary feature.

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[53] This "normal" order of bathing could also receive endless variation. The manner in which an individual proceeded through the baths did not rely on a set path, yet the design tended to follow certain patterns. See Yegül 1992, 38, for ways to go through the baths; Brödner 1983, 38, for a diagram of bath designs based on Krencker 1929.

Other pools had different roles, perhaps with varying temperatures and water. Some may even have used water channelled off from the main pool. This may have been the case at the complex at Montegrotto Terme or even at Aquae Caeretanae. This means that the placement of the pools had to be arranged so as to obtain effects from the water which are most desirable, without much regard to the order in which they fall.[54]

In general, the architecture of the spas corresponds directly to the manner in which the baths were used. A great degree of freedom was provided, allowing whatever facilities were needed for treatment to be available. As the focus of the spas was on the resources of the thermal-mineral springs, the main aim of the design was to create access to the waters. This led to an architectural type that can clearly be seen as related to normal bath buildings, but with variations as necessary. For each spa an architectural design emerged that was suited to the uses of the thermal-mineral waters.

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[54] The same sort of disorganized layout occurs in Gaul: "Ce qui frappe dans ces thermes d'Aix-les-Bains et semble s'être produit également à Aix-en-Provence, c'est la multiplication des piscines qui, évidemment, utilisaient l'eau chaude naturelle mais dont on n'aperçoit pas une distribution logique." Grenier, 408.

Chapter 4

The Archaeology of Baiae

The archaeological record of Baiae is without a doubt the most extensive among the material relating to Roman healing spas.[1] The area around Baiae has been the subject of scrutiny for centuries, not least because of the continued use of the thermal-mineral springs for bathing through the Middle Ages.[2] The work carried out during the last fifty years has brought further attention to the physical remains of what was one of the best known places in the Roman world for leisurely and health-giving activities.

The most significant feature of the region is the area known as the Hillside Complex (fig. 5) where Maiuri's excavations revealed the remains of thermal-mineral spas located on the eastern slope of a steep incline overlooking the Bay of Naples. His work opened up a great deal of controversy and discussion about the ownership and function of the complicated buildings. Scholars have argued ever since about whether the many separate clusters of rooms and halls were intended for public, private, or imperial bathing.

At the Hillside Complex, there are several distinguishable areas which made use of the natural hot springs: the Southern Baths (fig. 8-10), the Hadrianic Building (fig. 10), and the Thermae of Sosandra (fig. 10). There are also the well-known domed buildings, the Baths of Venus (fig. 7), the Baths of Mercury (fig. 6), and the Baths of Diana (fig. 5). Beyond the zone of the Hillside Complex, a number of other archaeological remains have provided evidence for the use of thermal-mineral springs in the region.[3] These include the Baths of Apollo, the "Stufe di Nerone," and other bath buildings datable to the Roman period. As a result of the research carried out in recent years, it is possible to place the structures known in the Baian region into the wider context of the architecture of spas.[4]

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[1] For the extensive bibliography on Baiae, see Yegül 1992, 437, no. 11; and Paolo Amalfitano, Giuseppe Camodeca and Maura Medri, eds. *I Campi Flegrei* (Naples, 1990), 329, 333 (= Amalfitano 1990).

[2] For a summary of the many accounts about Baiae since the eighth century, see M. Borriello and A. D'Ambrosio, *Baiae-Misenum. Forma Italiae regio I volumen XIV* (Florence, 1979), 15-17. Also, see E. Pontieri, "Baia nel medioevo," in *I Campi Flegrei nell' archeologia e nella storia. Rendiconti dei Lincei* 33 (Rome, 1977), 377-409.

Southern Baths[5]

At least three separate small bathing suites make up the area of the Southern Baths, indicated with Arabic numerals 1-3 on the main plan (fig. 5). Some of these baths have been the subject of recent study. In general, any interpretation of the rooms is difficult, because of their interconnected nature and the many modifications, repairs, and restorations carried out in both antiquity and modern times. Not only has an understanding of the architecture in this area proved elusive, but there is insufficient evidence to warrant definite conclusions about the dating of the construction of the units or of later changes made to them. An analysis of building technique, in particular the use of *opus reticulatum*, is generally inadequate as this method of masonry had a long period of use.[6] Some sense of dating can however be gained from the architectural layout of the suites. The baths, arranged in a regular and linear manner, are in design most similar to complexes which belong to the Republican or early Imperial baths in Campania.[7]

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[3] Most recently compiled in Borriello and d'Ambrosio 1979; also see Crova 1956, 277-285.

[4] Two recent publications have provided a basis for description of the archaeological remains at the Hillside Complex. In his recent comprehensive article, Yegül provides a commendable interpretation of the relationship and function of these buildings and provides a synthesis of many points of dispute. Amalfitano provides a more descriptive account of the site. See Fikret Yegül, "The Thermo-Mineral Complex at Baiae," *Art Bulletin* 78 no.1 (1996): 93-110; Amalfitano 1990, 184-237. Also, Alexander McKay, "Pleasure Domes at Baiae," *Studia Pompeiana & Classica* 2 (1988), 155-172.

[5] Amalfitano 1990, 223-225 (although the description of the rooms is difficult to understand because of an inadvertent lack of labelling in the plan); P.E. Auberson, "Etudes sur les 'Thermes de Vénus' à Baies," *Rendiconti dell'Accademia di Archeologia, Lettere e Belle Arti-Napoli* 39 (Naples, 1964): 167-178; Amedeo Maiuri, *The Phlegraean Fields* (Rome, 1969); 76; Yegül 1992, 101-102; Yegül 1996, 140-142.

Each of the bathing suites had a similar design of a small domed rotunda with a series of attached rectangular rooms. The different units, although independent in operation, were joined together by various passageways, stairs, and courtyards. The placement of the suites on the hillside is fairly irregular as the location of the thermal-mineral springs determined the layout. A series of conduits supplied natural steam from underground hot springs which in turn heated rooms with hypocausts as well as basins or pools with water.[8]

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[6] See Chapter 3, footnote 20.

[7] for a few examples, cf. Cales (Nielsen 1990, 7, Cat. 35) 90-70 B.C.; Herculaneum, Forum Baths (Nielsen 1990, 7, Cat. 38), Early Augustan; Pompeii, Forum baths (Nielsen 1990, 7, Cat. 42), Sullan, then rebuilt in the Augustan period, and again in the later A.D. 3-4th centuries.

[8] The evidence for this is the lack of a furnace. The absence of any burning on the hollow ceramic columns which supported the floor is also suggestive of the use of natural vapours for heating. For the underground network of channels and tunnels providing access to the hot springs, see R.F. Paget, "The Great Antrum at Baiae: A Preliminary Report," *PBSR* 35 (1967): 102-112.

In Bath 1 (fig. 8), at least two rooms were heated by natural steam.[9] Water was heated by contact with natural steam in a room at the south end of the building (G) and then transported to three small basins in Room F. A circular room (E) with an intact vault complete with a central opening (or *oculus*) is located west of room D which lies next to the room with the heated baths. Its floor is elevated and supported by piers under which hot steam could pass. The vapours were channeled directly into the chamber from a conduit leading from an underground spring. Room C was also heated, after a later modification. It contained a heated semi-circular pool. Room B, rectangular with a small niche on the west side, had a barrel vault. It may have been an entrance room to the complex and provided access to either Room C or Room A. Later changes included the addition of Room A which contained two semicircular pools for cold water bathing. This suite may have been one of the first baths on the slope as there seems to have originally been a moderately-sized courtyard to the west of the building. The area was subsequently reduced by the building of another bath suite, Bath 2, lower down the slope.

Bath 2 (fig. 9) is located on the middle level of the hillside and consists of two levels of building.[10] The poor state of preservation makes interpretation difficult. Auberson believed that it was made up of two suites of baths with a number of service chambers on the lower levels. This view has been followed most recently by Amalfitano. Yegül, on the contrary, has suggested that the lower level of rooms in fact comprised a full suite of baths. His assessment is based on the presence of five rooms connected to an octagonal room, some of which were directly served by conduits which carried natural steam. This is an arrangement which "would have been well-suited to the needs of curative bathing."[11] I am unable to come to a satisfactory conclusion about the design of the area, but it seems that the lower chambers were not in fact designed as baths as they lack architectural features or fixtures that would facilitate such a function. It is more likely that the rooms served as substructures or service chambers for the bathing suite above.

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[9] These baths are the same as Yegül's Bath B and Amalfitano's Piccole Terme.

[10] Bath 2 = Yegül, C and C' = Amalfitano, Terme del livello intermedio.

The upper levels, on the other hand, have several features which confirm that this was a bath establishment. After passing through an entrance hall (A), the visitor entered a large room with niches in each corner (B).[12] The room was octagonal with a domed roof. It opened to a moderately-sized unheated pool (C). Another rectangular room attached to the west of this pool must have been a *frigidarium*. It had alternating semicircular and rectangular niches along the long walls, presumably for holding statuary. To the south of these rooms are the heated chambers E and F. Beside these rooms was another large heated room (D). Although the physical remains are not substantial, there is some evidence to suggest that hot pools were available in this room. This entire building seems to have been heated by natural hot vapours distributed through vents originating in the large octagonal room at the very south end of the building (G). This room has been called a *laconicum* and probably did function as a sweating chamber. It almost certainly was domed.

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[11] Yegül 1996, 140 n. 17.

[12] Modern reconstructions have made it extremely difficult to interpret the layout of the original structures. The wall at the east side of A is a later addition and the original plan probably allowed for direct access between A and B. That Room B originally contained four niches may be determined on the presence of one completely preserved example in the north-west corner and a second in the south-west corner which has been re-built as a wall. A symmetrical design of the room, likely because of its circular shape, would require two more niches on the opposite sides.

The lowest level of this complicated network of structures is Bath 3 (fig. 10).[13] The complex above, Bath 2, is supported in part by the walls of the lower bath. Three of the rooms constitute the main part of the bath facility and have been known since the eighteenth century as the Stanze di Venere. Room I is a square, heated room with a cloister vault. Room II is a rectangular apsidal hall and was barrel-vaulted. It too may have been heated. The third room was circular and domed and must have been a sweating room. These three rooms were converted into cisterns. The dating of the rooms is based largely on the still-preserved stucco decoration and the use of *opus reticulatum*. The stylistic evidence of the stucco suggests an Augustan date.[14]

Hadrianic Building[15]

To the south of these three baths and on the same level as Bath 3, is a large rectangular structure, the Hadrianic Building (fig. 10).[16] This area included a long portico, marked with Arabic numeral 1, (c. 70 m) which ended on the north side in an apsidal room, perhaps a dining room (2). The main area consists of a carefully planned and executed group of rooms which centred on a large apsidal room containing a pool (3). The apse originally contained eight niches with fountains; these were later reduced to three large niches. The large apsidal pool was heated by means of a hypocaust to allow the flow of hot vapour. Three rectangular rooms lay to the east of the apsidal space (4, 5, 6). The middle one (5) originally opened onto the pool; it was later closed off by a wall. On either side of the central pool were two large groin-vaulted rooms (7 and 8). These had raised floors for heating by natural steam. A Hadrianic date has been suggested based on the architectectural plan and use of space.

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[13] Bath 3 = Yegül D = Amalfitano, Terme di livello inferiore.

[14] R. Ling, "The Stanze di Venere at Baiae," *Archeologia* 106 (1979): 33-60.

[15] Amalfitano, 229-231; Maiuri 1969, 76; Yegül 1992, 102-103; Yegül 1996, 142-144; G. de Angelis d'Ossat, "L'architettura delle terme di Baia," in *I Campi Flegrei* 1977, 252-256.

[16] Hadrianic Building = Yegül, Hadrianic Natatorium = Amalfitano, complesso termale adrianeo.

Thermae of Sosandra[17]

Another large development is located to north of the South Baths, covering an area of approximately 50 m x 100 m. This area is known as the Thermae of Sosandra (fig. 10) because a statue of Aphrodite Sosandra was discovered inside it.[18] Three different levels comprise the entire building: 1) an upper terrace with a colonnade opening towards the sea (A); 2) a large hemicycle structure with eleven adjacent rooms behind a curving arcade on the middle level (B); 3) an immense pool (34.80 m x 28.60 m) with an overlooking portico on all four sides at the lowest level (C). The upper terrace seems to have been residential and had rooms with stucco and mosaic decoration. Access to Bath 1 was possible from this area. The interpretation of the hemicycle has remained problematic. Maiuri viewed it as a Theatre-Nymphaeum, designed for engaging in aquatic entertainment while Giuliani interpreted the structure as a villa. Yegül supports the idea that the exedra was part of a "water-theater" and supplies the so-called "Tomb of Agrippina" as a nearby parallel. He argues that a facility of this kind would be appropriate for the recreational lifestyle at Baiae.[19] A large circular pool (approx. 6 m in diameter and equipped with three steps on one side) placed centrally in the terrace of the hemicycle was connected by channels to an underground spring.[20] The large rectangular pool was fed by another sulphureous spring located at the bottom of the hill.[21] This structure was most probably a swimming pool, and took advantage of the thermal-mineral waters which were collected in ample quantity.[22] The architectural plan of the entire structure is very cohesive and organized. Its exact date is uncertain. The building technique and style of some of the stucco decoration suggest that it was built at some time between the early Augustan and Neronian period.[23]

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[17] Amalfitano 1990, 209-217; de Angelis d'Ossat 1977, 238-242; Cairoli Fulvio Giuliani, "Note sull'architettura nei Campi Flegrei," in *I Campi Flegrei* 1977, 365-375. Maiuri 1969, 73-76; Italo Sgobbo, "I nuclei monumentali delle terme romane di Baia per la prima volta riconosciuti," in *Atti dell III Congresso nazionale di studi Romani I 1934* (Bologna, 1935), 301-302; Yegül 1992, 103-105; Yegül 1996, 144-146.

[18] *Le Collezioni del Museo Nazionale di Napoli*, 1.2 (Naples, 1989), 100, no. 26.

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[19] Maiuri 1969, 74; Giuliani 1977, 374; Yegül 1996, 45. For the Tomb of Agrippina, see Borriello and d'Ambrosio 1979, 102-103.

[20] The villa of Anguillara Sabazia has a similar arrangement of a hemicycle of 82.0 m with basins which collected spring water. See H. Mielsch, *La Villa Romana* (Florence, 1990), 52 who compares this structure to the Thermae of Sosandra. On the villa, see Roberto Vighi, "Anguillara Sabazia," *NSc* ser. 7, vol. 1 (1940): 398-419.

[21] Maiuri 1969, 74.

[22] As a pool for staging water-battles, see de Angelis d'Ossat 1977, 243; as an "open-air cistern," see Yegül 1996, 145.

[23] Yegül 1996, 145.

Although the complex is lacking in features normally associated with bathing, its function as a facility designed to use the abundant thermal-mineral waters is clear. The combination of two spring-fed pools and the series of small rooms, functioning perhaps as changing or resting rooms, would have provided good means for using the water.

Baths of Mercury[24]

The so-called Baths (or Temple) of Mercury (fig. 6) are located on the lowest level of the baths at the north side of the Hillside Complex.[25] Three distinct periods of building are evident. The oldest, and most conspicious, is the extensive domed hall (A). The dome spanned a diameter of 21.5 m and had a central opening in the apex as well as four windows in the curved surface. Maiuri argued that the dome was Augustan because it was made with agglomerate of tufa rubble rather than brick or masonry. Whether it is actually so is unclear; in any case, it has features characteristic of the early Imperial period but before the second half of the first century A.D.[26] Engravings of the 18th century show that inside the hall four niches were placed diagonally opposite each other. The main entrance was on the eastern side of the room. Opposite it there was a rectangular niche connected to the outlet of a hot spring located underneath the hillside. It has been supposed that a large circular pool occupied the hall but this is not certain since the room has not been excavated and is currently filled with water to just below the top of the small niches. The decorative elements, which would have included marble veneer on the walls and stuccowork, are no longer preserved.

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[24] Amalfitano 1990, 205-209; de Angelis d'Ossat 1977, 234-238; Maiuri 1969, 77-80; Yegül 1992, 106-108.

[25] n.b. The plan of the Baths of Mercury in fig. 5 (from Maiuri 1969) is a somewhat enhanced analysis of the archaeological evidence. In particular, the circular room is more fragmentary than suggested on the plan.

[26] Adam 1994, 187.

A series of four more rooms is found to the south of the domed hall. The first is a long rectangular barrel-vaulted room with an apse at the west end (B). The vault was covered with mosaic and had an opening for light. The next room to the south is smaller, but also had a barrel vault (C). The walls were decorated with stucco; this was later covered with marble veneer. A third room had a circular plan and a segmented vault (D). Like other small circular rooms, this may have functioned as a sweating room. At the south end of the unit, a square room with a cross-vault had a series of niches along the walls (E).

To the west of the apsidal barrel-vaulted hall was another small suite of baths. This small suite may have been associated with the Villa of the Ambulatio, a terraced structure rising up to the south and west of the Baths of Mercury.[27] This is likely, as the small unit of bathing rooms is closer to the terraced area than to the rooms directly associated with the rotunda. Alternatively, there may have been some means of access available leading from the space which is located below the last terrace of the Villa and to the south of the last room of the Baths of Mercury. There is now a modern point of entry from the apse of the barrel-vaulted room. This bathing suite comprises five small chambers. Two of the rooms display features which are clearly similar to those of the South Baths. The north-west room had an octagonal design and was covered with a

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[27] Amalfitano 1990, 207; Yegül 1996, 146-148.

segmented vault; its plan suggests that it was a sweating room (3). The room to the south of the octagonal chamber was rectangular and cross-vaulted (2). A semicircular niche containing a pool with steps from the entrance was placed at one end of the room. A third larger rectangular cross-vaulted room had an opening lined with white mosaic from which hot spring water flowed (5).

Baths of Venus[28]

Another structure at the Hillside Complex which may have had a bathing function is the so-called Baths (or Temple) of Venus (fig. 7). This is now separated from the rest of the Hillside Complex by modern development but it was originally conceived as part of the entire assemblage. Its most obvious feature was another large rotunda. The interior was circular with four evenly spaced large niches. A main entrance door was located on the east side, facing the sea. In order to offer a view such as could be found in the complexes built higher into the hillside, a walkway was placed in the upper levels of the rotunda, providing a view from the large windows opening from the top of the walls. An "umbrella" vault spanned a diameter of 26.3 metres. To the south of this large hall there were several rectangular barrel-vaulted chambers. At the south-west corner of the hall there existed a pavilion, an intricately-designed unit of curvilinear chambers. A second century A.D. date has been suggested for this establishment, based largely on the innovative design of the vault and the plan of the pavilion. The function of this complex is not clear. There is no evidence to show that it was used as a bath. To judge by the combination of a large circular hall with a series of associated rooms, it is likely that it served a similar purpose to the large bathing hall of the Baths of Mercury.[29]

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[28] Maiuri 1969, 80-83; A. Maiuri, "Terme di Baia, scavi, restauri e lavori di sistemazione," *Bolletino d'Arte* 36 (1951): 359-364. I. Sgobbo 1935, 302-304; G. de Angelis d'Ossat, "Il 'Tempio di Venere' a Baia," *Bulletino della Commissione Archeologica Comunale di Roma* 12 (1941): 123-131; F. Rakob, "Litus Beatae Veneris Aureum. Untersuchungen am 'Venustempel' in Baiae," *RömMitt* 68 (1961): 114-149; Borriello and d'Ambrosio 1979, 76; Yegül 1992, 108-109; de Angelis d'Ossat 1977, 243-256.

Baths of Diana[30]

The third of the domed rotundas at Baiae is located north of the main area of the Hillside Complex. Although much of the main domed hall and most of the adjoining rooms are now buried, it is likely that this series of rooms also served a bathing function. The rotunda is similar to that of the Baths of Apollo with a circular plan on the interior and an octagonal exterior. The diameter of the interior is 29.50 m and is characterized by a series of alternating rectangular and semi-circular niches. Eight windows are placed above the niches; five of these are preserved on the remaining portion of the hall. The construction is a combination of tufa blocks as facing for concrete and *opus vittatum*. The dome is made of concrete faced with brick and it is not hemispherical but instead is slightly "egg-shaped." Although approximately half the building is no longer preserved, nearly half of the dome itself is intact to the top. Although it has been postulated by de Angelis d'Ossat that this particular building was part of a Severan complex, it would seem more likely that it functioned in the same manner as the other large rotundas. Furthermore, Mauiri's observation that this hall was built close to the hillside in order to take advantage easily of the natural hot springs seems quite likely.

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[29] It has also been considered a nymphaeum. See Sgobbo 1977, 292.

[30] Mauiri 1969, 83; de Angelis d'Ossat 1977, 256-261; Amalfitano 1990, 231-232; Yegül 1992, 109.

Baths of Apollo[31]

The last of the large rotundas in the Baian region which seems to have been a bath is found on the shore of Lake Avernus. The Baths (or Temple) of Apollo had a hall which was octagonal on the exterior and circular in the interior. The building had two floors. The lower had four semicircular and four rectangular niches. The upper level had four large windows placed near the curve of the dome. There may have been a walkway around the upper level as well, just as in the Baths of Venus. The span of the dome measured 36 metres, second only to the Pantheon. There may have been a large circular pool fed by the many hot springs in the area or even by the waters of the lake. The hall has been assigned a mid-second century date based on its building technique and architectural form.

There are also several other structures attached to the large rotunda. A hall with one apsidal end was placed at the back of the building. It had openings which face the hill and may have allowed natural heat from the fumaroles to enter. Another small circular room with a vault having a small opening was also placed next to the large hall. Three openings for the entry of natural heat suggest strongly that this was a sweating room. A sketch of the building from before the 1538 volcanic eruption shows seven rooms attached to the large rotunda; unfortunately, the eruption destroyed many of these rooms.[32]

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[31] Maiuri 1969, 153-156; de Angelis d'Ossat 1941, 123; Rakob 1961, 133-149; Amalfitano 1990, 173; Yegül 1992, 109-110.

Stufe di Nerone[33]

The so-called Stufe di Nerone is located on the coast to the north of the Hillside Complex (no plan available). This elaborate bathing complex consisted of at least three separate levels of facilities. The first was at sea-level and had a gallery which opened into the hill where there were outlets of extremely hot spring water. There were also rooms built in *opus reticulatum* and *opus latericium* which may have been pools for bathing. The second level must have been at street level and was used for steam-bathing; it had outlets for the rising of vapours from the thermal-mineral springs of the lower level. The third level was about ten meters above street level. A series of underground corridors leading for approximately fifty meters into the hillside eventually reached an area where the hot spring water gathered into a basin. This was the source for both the hot water and the natural vapours necessary for the operation of the baths. It has been suggested that the original core of the structure belonged to the Augustan period with later additions.

Other Baths

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[32] See Yegül 1992, 109-110.

[33] Borriello and d'Ambrosio1979, 41-42; Amalfitano 1990, 180-181; Maiuri 1969, 63-64; Yegül 1992, 94-96.

There are many other ruins associated with bathing in the region around Baiae.[34] Given the numerous hot springs and volcanic activity in the area, it is not inconceivable that some of these examples had thermal-mineral bathing facilities. In most cases, the archaeological evidence is minimal, making an accurate assessment of the nature or date of a site nearly impossible. Only three of the many structures had a clear indication that thermal-mineral springs formed a part of the activity.

Two circular basins, around 150 m south-west of Lake Lucrinus, were noted at the end of the eighteenth century. They were supplied by water from a deep spring at a temperature of 60° C. The pools were thought to be fisheries and to be part of one of the many villas which rose up during the Augustan period around the Lake. As the temperature of the water would be too hot for fish, it is more likely that they served as collecting basins for thermal-mineral water intended to be used for spa bathing. This possiblility does not excude an association with a villa as it is likely that private establishments made use of spring waters for therapeutic purposes.[35]

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[34] From Borriello and D'Ambrosio 1979, Catalogued Items referring to Bathing:

Baths:

5) (38) bathing rooms - near the P. Epitaffio, minimal remains of walls.

6) (38-41) bathing establishments - between Lake Lucrinus and P. Epitaffio, six baths known from later sources, none are datable to the Roman period

11) (43-44) bathing rooms - between Lake Lucrinus and P. Epitaffio, arcades of *opus reticulatum* and *latericium*.

25) (54) bathing rooms - 200 m north of P. Epitaffio, four vaulted rooms, traces of two other rooms.

31) (59) bathing rooms - near the so-called Temple of Diana, remains of a pool and rooms.

Lead Pipes:

10) (43) between P. Epitaffio and Tritoli Hill, with inscription: *C. Poppaei Aug(ustae) l(iberti) Hermetis*.

16) (45) in area of the Stufe di Nerone, with inscription: a) *P(ubli) Octa(vii) Lutati Quintilian(i) c.v.*; b) *Q(uinti) Pomponi(i) Matern(i)* c) *Saeclaris Aug(usti) l(ibertus)*, d) *Saecul(aris)*, e) *Noniae Antist(iae)*.

Several rooms constructed in *opus reticulatum* located near the coast by the Stufe di Nerone may have belonged to another bath building. At least three rooms are identifiable, one having a series of niches along one side. An early note relates that there were ruins of a pool. The most important feature is a channel leading underground to a thermal-mineral spring. It has been suggested that this structure may have been the Balneum Sylvani mentioned by Ammianus Marcellinus (28.4.19) when he describes the decadent bathing activities of wealthy at Baiae.[36]

Two halls excavated into the tufa of the hill were found near the Castello di Baia. Each room had ten basins and stone-carved beds (probably added later). In one of the rooms, a conduit connected to a fountain placed at one end of the hall supplied water for each basin. In the other room, an opening led to an underground channel cut into the tufa. An account of the rooms from 1812 says that one room had hot vapour and the other was cool and moist. It is not known to what period these structures belong; no archaeological remains are preserved today, although other buildings nearby are datable to the first century A.D.[37]

Observations

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[35] Boriello and D'Ambrosio 1979, 36, cat. no. 3; On private ownership of thermal-mineral springs, see Chapter 7.

[36] Borriello and D'Ambrosio 1979, 36-38, cat. no. 4.

[37] Borriello and D'Ambrosio 1979, 88-89, cat. no. 56.

Although Baiae ranked highly among spas of the ancient world, it is perhaps surprising that the architecture of Baiae, while making use of thermal-mineral resources, is not obviously related to that of other spas. In the thermal-mineral establishments of Baiae there are no large rectangular pools, benches, or steps. Apart from the rectangular pool in the Thermae of Sosandra, there is little evidence of large communal pools such as are found at spas elsewhere. The large rotundas are presumed to have contained such pools, but there is as yet no archaeological evidence to confirm this and bradyseismic activity has made the original floor levels inaccessible in recent times. It would appear that despite the abundance of thermal-mineral springs, there was little use of the water for actual bathing. Instead, there seems to be a much greater interest in harnessing the curative powers of the natural steam created from the springs. The many elaborate underground tunnels and conduits designed to transport hot vapours into sweating rooms attest to this. The use of natural steam for sweating is a feature found at other spas.

It seems that the spa bathing at Baiae, despite its great renown, did not greatly influence the architectural development of spas at other places. What Baiae seems to have offered is a great deal of innovation resulting from having a good supply of natural resources. This included not only the many hot springs, but also building material (e.g. tufa and pozzolana) with which to achieve new successes in design. Thus, the development of the hypocaust heating system, perhaps the ***balneae pensiles***, the invention of which is attributed by literary tradition to Sergius Orata,[38] could have easily come about where an abundance of natural steam and the creative thinking of an entrepreneurial oyster farmer existed together.[39]

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[38] e.g. Pliny *HN* 9.168; Valerius Maximus 9.1.1; Macrobius *Sat.*.3.15.1-3. On Sergius Orata's role in the development of the hypocaust, see Garrett G. Fagan, "Sergius Orata: Inventor of the Hypocaust?" *Phoenix* 50 (1996): 56-66.

It remains problematic trying to untangle the private and public features of the Hillside Complex. This is a question of both ownership and use. Previous discussion about the complex has revolved largely around the architectural design of the buildings. Various arguments have ranged from the baths functioning as one large thermal-mineral bathing establishment to an imperial palace to a collection of private villas and baths.[40] Recent scholarship, however, has suggested that attempts at interpreting the use of space and buildings at Baiae as public or private are misleading or inconclusive.[41] Distinctions between private and public use were not always obvious and could sometimes be intentionally blurred.[42] It is for these reasons that an architectural analysis of the Hillside Complex with regard to its public or private nature must be taken with extreme caution.

Yet despite this, some interpretation of the Hillside Complex is indeed possible. The Complex most likely did not function as a single establishment. The lack of unity in the layout of the area, together with the wide range of types of facilities available would seem to preclude that possibility. Although there is not sufficient evidence to interpret the ownership of the establishments adequately, I would suggest that the majority of the bathing suites functioned for public use. Not only were there ample facilities for many visitors, but the written sources seem to allude to this possibility as well. It is well-known that the baths of Baiae were frequented by a wide range of classes of Roman society, including the imperial family, upper-class citizens, lower-class citizens, freedmen, and foreigners.[43] In addition, many villas belonging to wealthy individuals and families existed in the area.[44] It is likely, given the large numbers of visitors to the area, that the bathing establishments of the Hillside Complex were available for their use. When Cicero complained about the crowds at Baiae, he was not describing visitors spread out over the entire region.[45] The image created was of an overcrowded, concentration of visitors, all perhaps seeking thermal-mineral baths in one of several establishments which would already have existed in the first century B.C. on the hill.

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[39] On the contribution of the baths of the Phlegraean Fields, see Italo Sgobbo "Terme Flegree ed origine delle terme romane." in *Atti del I Congresso nazionale di studi Romani I 1929* (Rome, 1929), 186-194; for the development and spread of the hypocaust, see Nielsen 1990, 20-22; DeLaine 1989, 111-125.

[40] Mixture of villas and baths which were later converted into a single establishment: Giuliani 1977, 374-375; Imperial palace: A. de Franciscis, "Underwater discoveries Around the Bay of Naples," *Archaeology* 20 (1967): 212-215; Private establishment: Paolino Mingazzini, "Le terme di Baia," in *I Campi Flegrei* 1977, 279-280; Single large thermal bath: Sgobbo 1977.

[41] Yegül 1996, 148.

[42] See Andrew Wallace-Hadrill, *Houses and Society in Pompeii and Herculaneum* (Princeton, 1994), 15-37.

Although in general it is advisable to be careful in analyzing architectural form with respect to its function, the Hadrianic Building of the Hillside Complex is a clear instance of architecture with a public function, probably imperial in nature. The combination of the large portico with the central apsidal hall provided a structure which was clearly meant for a public purpose. The apse itself was intended as a place for display. The size of the hall, with its large pool and the niches in the walls, presumably for statuary, provided a sense of grandeur expected in an imperial setting. Furthermore, the centrality of the pool was made even more apparent by Room 5 (fig. 10) which originally was separated from the hall by a colonnade. This afforded an unobstructed view of whatever activities might be occurring in the pool.

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[43] See Chapter 6 and 7.

[44] See D'Arms 1970; J. D'Arms, "Proprietari e ville nel Golfo di Napoli," in *I Campi Flegrei* (Rome, 1977), 347-363.

[45] Cicero *Att.* 14.16; 21.40.3; *Planc.* 65.

In general, however, many questions about the nature of thermal-mineral bathing at Baiae remain unanswered. Much remains to be learned about the architectural design and function of the existing archaeological sites. Little help is available from written sources, despite the great frequency of mention in the texts. This is partly because there is little actual description in the texts with which to correlate the archaeological evidence.[46] Despite these difficulties, the archaeological picture together with the literary record confirm that Baiae's importance as a healing spa and a resort was unequalled.

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[46] Yegül's recent work with the text of Peter of Eboli, *De Balneis Puteolanis*, is an important attempt to overcome this problem. However, it remains somewhat difficult to accept that this early 13th century manuscript can be utilized as an accurate account of the Roman baths at Baiae. See in particular, Yegül 1996, 148-155.

Chapter 5

Applications of Thermal-Mineral Water

A good deal of information about the methods of use of thermal-mineral waters in spas can be found in the medical writers, some of whom give a clear description of how to engage in thermal-mineral treatment.[1] Soranus is one of the best sources regarding these procedures. His methods for treating gynaecological disorders frequently employ thermal-mineral bathing as part of the healing therapy. For most problems, he does not specify a particular spa, although he does so in some cases. Caelius Aurelianus, the transmitter of Soranus, also records the use of spring water. Galen does not elaborate at length on the benefits of spring water and bathing, but his medical advice includes the use of thermal-mineral waters. Other details about the methods employed at spas can also be elicited from both specialist and non-technical texts. In many cases, the archaeological evidence corroborates the literary testimony, furthering our understanding of the way in which visitors to a spa received their treatments.

Because spas required the presence of thermal-mineral springs, it can be assumed that the majority of the cures effected at the health centres involved the use of warm or hot waters.[2] The primary method of therapy seems to have involved various forms of bathing which allowed physical contact to be made between the affliction of the patient and the thermal-mineral spring water. It is difficult, however, to determine the methods of bathing used. Only a few of the literary sources include any details about using the water, and the vocabulary they use to describe bathing routines at spas is often imprecise. Nevertheless, a good sense of the methods used can be gained by considering both the diseases treated and the terminology used to indicate a particular method. In a few cases, the nature of the problem itself implies a particular method of using the waters even if the text does not provide adequate information about the manner of their use. In some cases a variety of methods was generally believed to be effective. Many more instances of thermal-mineral bathing occur in the sources than those presented here; I have chosen those which give the clearest indication of how spring water was to be applied.

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[1] For a useful compilation of the many varieties of bathing attested mainly in the literary sources, see Francesco Di Capua, *L'idroterapia ai tempi dell'impero romano* (Rome, 1940), 15-35. It is likely that similar techniques of water therapy were employed in both thermal-mineral bathing and ordinary bathing. I have included those which seem especially appropriate in a spa or which focus on the use of spring water.

[2] See Chapter 2.

Terminology of Spa Bathing Activity

In many of the recommendations for the use of spring water, no clear direction is given as to how the water should be applied. General expressions such as the verb *aquis uti* or *ad aquas venire*[3] are often the only indication of bathing activity. In the text of Caelius Aurelianus, nearly half the recommendations for the use of thermal-mineral water are expressed by two related phrases; 1) *usus aquarum naturalium* or 2) *utendum aquis naturalibus*.[4] The noun *usus* and the verb *uti* do not, in themselves, indicate a particular way of applying the waters. Although it is tempting to interpret this method as an ordinary act of bathing (i.e. immersing oneself in a pool of water), it is more likely that a combination of methods is implied. This is made clearer by the advice to use certain water by both washing with it and drinking it.[5]

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[3] Cicero *Planc.* 65.

[4] Caelius Aurelianus *Chron.*: 1.1.42, 1.1.44, chronic headache; 1.4.111-112, epilepsy; 1.5.169, mania; 2.1.48, paralysis; 2.3.70, earache; 3.1.10, asthma; 3.2.45, gas and cramps; 3.4.54, liver and spleen disorders; 3.6.89, cachexia; 4.7.104, colon disorders;

Three other examples of the word *usus* do little to clarify the exact meaning of the word. Cicero uses the phrase *aquis calidis uterentur* to describe the treatment appropriate for ill persons at Baiae.[6] Suetonius relates that Vespasian was injured by *creberrimo frigidae aquae usu* at Cutiliae, but leaves it unclear what method injured the emperor.[7] Varro claims that the use of hot springs was beneficial for treating various diseases; his use of the word *usus*, however, does not imply any technical method of use.[8]

In some cases in which the verb *uti* is used to describe bathing, it is followed by a more precise definition of what is required. Celsus prescribes the use of baths with natural waters as much as possible for paralysis (*utendum est iis potissimum*), and clearly states that they should be used by swimming.[9] Suetonius describes how Augustus used the baths of Albulan water brought to him sitting in a wooden tub and splashing.[10]

5.10.126, internal abscesses.

[5] Caelius Aurelianus *Chron.* 3.2.45.

[6] Cicero *Clod.* frag. 19.

[7] Suetonius *Vesp.* 24.

[8] Varro *Ling.* 9.69.

[9] Celsus 3.27.1E.

[10] Suetonius *Aug.* 82.2.

A few terms are moderately more helpful. Words related to *lavare* are often used to indicate bathing, especially in a non-medical context. However, in the context of spas, the word appears infrequently. Florus twice uses the term to describe activity in spas, but does not specify the procedures used.[11] Rutilius Namatianus refers to the indecisive bather (*lavantem*) at Aquae Tauri.[12] It should probably be assumed that in each case of this word, a general immersion and washing procedure, such as would be expected for ordinary bathing, is implied. This is supported by Columella's use of the term *lavare* as a synomym for *mersare* in reference to dipping cattle in a stream in order to cure certain ailments.[13]

Another verb found several times in the context of using thermal-mineral waters is *fovere*, normally meaning "to warm." In medical terminology, the word can be more specific and means to wash or foment with water or a concoction.[14] In the context of spas, *fovere* means to warm by using thermal-mineral water. Spring water, when applied, had the ability to warm up parts of the body. With this word, Vitruvius describes the heating effects of alum spring water as it passes into the pores of the body.[15] Seneca indicates that it was possible to heat the interior of the body by drinking thermal-mineral water.[16] Martial, describing the scandalous behaviour of Laevina, uses the phrase *Baianis saepe fovetur aquis.* The verb is clearly intended to draw upon both the general meaning, "to warm," and the technical sense of taking the waters at a spa.[17] Caelius Aurelianus uses the phrases *fovendum caput* and *ferventiore aqua fovendi aegrotantes.* to specify the method of application of spring water.[18]

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[11] Florus *Anth. Lat.* 108, 110.

[12] Rutilius Namatianus 1.253.

[13] Columella 2.21.3.

[14] eg. Celsus 1.3.5; 1.5; Pliny *HN* 32.34.106.

[15] Vitruvius 8.3.4.

Immersion Bathing

As is evident from the preceding discussion, it is difficult to determine exactly what method of bathing is prescribed by a particular text. When the use of thermal-mineral waters is recommended without specific advice for a method of application, the procedure most frequently implied must have been bathing, whereby a bather simply sat in a pool filled with spring water. Immersion bathing must have been so common that it was scarcely necessary to specify its use. It is therefore difficult to find clear reference to it in the texts. The archaeological evidence provides some insight as the great number of pools with depths of approximately 1.5 m attest to its frequency.[19] In general, words such as *lavare*, *fovere*, and *uti*, unless otherwise specified should be considered to refer to immersion bathing.

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[16] Seneca 3.1.2.

[17] Martial 1.62. *fovere* can also mean "to cherish or caress," alluding to the improper behaviour conducted by Laevina. On Martial's attitude's towards women, see J. Sullivan, *Martial: the unexpected classic* (New York, 1991), 197-207.

[18] Caelius Aurelianus *Chron.* 2.7.109; 3.5.73.

[19] See Chapter 3.

Standing, Sitting, and Showering

Some alternatives to simple immersion bathing were possible. One method employed was sitting in the water.[20] At Aquae Sinuessanae, this was believed to cure hysteria in women. As hysteria was believed to originate in the womb, it is reasonable to suppose that immersing the problematic area as directly as possible would be beneficial. Cures could be effected at Aquae Cutiliae by the same method. Celsus, in contrast to popular opinion, prescribes standing in cold springs (Cutiliae and Sumbruvium) to treat the paralysis of a stomach that will not accept food.[21] It is not clear, however, whether Celsus is advocating standing still in a pool of spring water at a certain depth or standing under a stream of water in much the same way as Caelius Aurelianus described treatment of an earache by showering. A similar vagueness is apparent in Horace's recommendation to seek a cure by putting one's head and stomach under the Clusine spring.[22] As both Aquae Cutiliae and the Clusine Spring had developed spa bathing facilities, either option would have been possible.

Showering or pouring water on a specific afflicted part is prescribed for several different ailments in the texts of Caelius Aurelianus. These include chronic headache, paralysis, earache, diseases of the esophagus, and colon disorders.[23] Water that is applied in this way need not be thermal-mineral water. However, because the suggestion for showering is usually made just prior to or immediately following a clear recommendation for the use of spring waters, it is more than likely that the properties of thermal-mineral waters were considered specially effective for these purposes.

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[20] Caelius Aurelianus *Chron.* 5.4.77; Martial 11.7; Strabo 5.3.1.

[21] Celsus 4.12.7.

[22] Horace *Ep.* 1.15.9.

[23] Caelius Aurelianus *Chron.* 1.42, 46, 99; 2.48; 2.70; 3.10, 45; 4.1.103.

Swimming

Physical activity in thermal-mineral waters was not a procedure which seems to have been widely recognized as effective. Cicero refers to swimming (*natatus*) at Baiae, but does not give any suggestion that this is part of medical treatment.[24] Celsus advises swimming in sea or spring water as a way of relieving paralysis.[25] He also indicates that stomach disorders can be helped by swimming in cold water rather than using a bath which might be hot. He does not specifically identify spring water as the only effective water for treatment in this case, but as he immediately afterwards recommends the waters from Cutiliae and Sumbruvium as being useful, it may be assumed that cold spring waters were acceptable for this cure.[26] Tibullus also mentions swimming in Etruscan springs as a means of recovering health apparently because of the benefits of the spring water itself rather than the activity in the water.[27] There is an overall reluctance to recommend a use of waters which might involve exertion; the preferred methods of therapy seem to have involved gently submitting the entire body to the substances found in the waters.

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[24] Cicero *Fam.* 9.2.5.

[25] Celsus 3.27.1.

[26] Celsus 4.12.7.

[27] Tibullus 3.5.

One exception to this is found in Caelius Aurelianus who frequently recommends swimming in spring waters for those patients who are in the recovery stages of treatment.[28] The word *natatio* seems to indicate full immersion in spring waters with a vigorous type of motion.[29] In one case, Caelius Aurelianus expands on the advice of Celsus and, as a treatment for paralysis, recommends swimming. The patient is not only supported by the water itself but is also assisted by attaching inflated bladders to the afflicted limbs.[30] Swimming could also be done in the sea and it can be inferred that the benefit was believed to come as much from the exercise itself as from the type of water used.

Drinking

Drinking spring water was a major activity at spas. The water functioned as either a purge or an emollient for many internal ailments. Thermal-mineral water of all kinds could be consumed and this method was advocated by many writers who refer to waters from particular locations as having healthful advantages. These include the waters from Aquae Sinuessanae, Aquae Tauri, Aquae Cutiliae, and Aquae Albulae.[31] In the case of Cutiliae, drinking and bathing together formed the entire cure. This may have been the case with other springs as well. There seems to have been some confusion about the exact method of treatment with the Albulan waters as prescribed for Augustus. Both sitting in and drinking the water are recorded; it seems likely that both methods were considered valid. Vitruvius identifies specific types of springs which, when consumed, were thought to be especially effective at curing internal disorders. These included bitumen, alkaline, and acid springs.[32] Seneca recommends drinking thermal-mineral water to relieve internal pain and to alleviate problems of the lungs and bowels.[33] Pliny advocates drinking spring water as an effective remedy and identifies Cutiliae and several other places known for acidic waters.[34] He also warns against excessive drinking of sulphur water.[35]

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[28] Caelius Aurelianus *Chron.* 3.7.93; 3.8.117; 4.1.1; 4.3.76; 5.11.134-135; 5.4.77.

[29] That the Romans engaged in swimming is known from references to swimming in the Tiber River in Rome as well as Pliny's description of getting more exercise in the outside pool because it was bigger. See Juvenal 8.265; Pliny 5.6.

[30] Caelius Aurelianus *Chron.* 2.1.48.

[31] Martial 11.82; Rutilius Namatianus 1.249-254; Strabo 5.3.1; 5.3.11; Pliny *HN* 31.32; 31.6; Suetonius *Vesp.* 24; Dio Cassius 53.30.4.

In contrast to these frequent recommendations for drinking spring water, Caelius Aurelianus rarely advises it. Only two disorders clearly indicate that drinking thermal-mineral waters is useful. In addition to taking a shower with spring water, drinking the water from Cutiliae and Nepesinae is a cure for diseases of the esophagus and cramps.[36] Water containing salt or nitrum when consumed is good for treating bladder stones or scabies.[37]

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[32] Vitruvius 8.3.4; 8.3.17-18.

[33] Seneca *QNat.* 3.1.2.

[34] Pliny *HN* 31.5; 31.6; 31.8; 31.32.

[35] Pliny *HN* 29.5.10; 31.31.

[36] Caelius Aurelianus *Chron.* 3.2.45.

[37] Caelius Aurelianus *Chron.* 5.4.77.

Unlike the various routines of bathing which can be perceived to bring about relaxation and a physical change, the drinking of spring water would not have produced any immediately visible effect. Often, the spring water would have had a bad taste because of its high mineral content. Drinking was probably conceived in much the same way as bathing in spring water was understood. In order to affect the particular afflicted part, contact needed to be made between the problem and the curative element. By ingesting water, a direct physical connection was made between the water and the internal disorder. Drinking spring waters seems to have been thought to cure disorders inside the body rather than problems which afflicted aspects of the mechanical functioning of the body.

Rinsing

Spring water also served to cure disorders of the eyes, usually by rinsing the eye. Infusing weak eyes with drops of water from the spring at Cicero's villa at Cumae is reported to have proven curative.[38] Seneca recommends using certain spring waters for healing eyes.[39] It seems likely that he is advising rinsing afflicted eyes with water.

Caelius Aurelianus indicates that a toothache can be treated by rinsing the mouth with spring water.[40] Pliny identifies the springs at Araxus as able to strengthen teeth; the method was probably rinsing the mouth with spring water.[41] Although none of these examples are specifically related to thermal-mineral waters from spas, it is likely that similar remedies were sought at the healing establishments.

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[38] Pliny *HN* 31.3; 31.8.

[39] Seneca *QNat.* 3.1.2.

[40] Caelius Aurelianus *Chron.* 2.4.78.

Steam-Bathing

In addition to the use of the water itself at spas, the benefits of sweating brought on by the steam produced by hot springs were also well-known. Celsus recommends vapour treatment from natural steam at Baiae.[42] The benefits derived from the hot springs were also noted by Vitruvius and Pliny.[43] According to Caelius Aurelianus, sweating caused by steam produced from natural springs is useful for treating the liver and spleen, jaundice, and dropsy.[44] Claudian clearly indicates an order of therapy as he notes that the sick, after having been weakened by sweating, visited a pool.[45] Although late, this passage is one of the rare literary glimpses of the actual processes which may have occurred in spas.

Unspecified Applications

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[41] Pliny *HN* 18.29.114.

[42] Celsus 2.17.1; 3.21.6.

[43] Vitruvius 2.6.2; Pliny *HN* 31.2.5.

[44] Caelius Aurelianus *Chron.* 3.4.54; 3.5.73; 3.8.112.

[45] Claudian *Carm. Min.* 26.65.

Sometimes it is possible to construe a more precise method of use than simply bathing by the nature of the ailment being treated. Caelius Aurelianus does not actually prescribe drinking the waters from Teanum or Aenaria, yet this must have been the treatment required to treat relieving internal abscesses.[46] Similarly, faster relief for an earache probably would have been procured by pouring water around the ear rather than drinking or bathing in spring water.[47] That wounds are believed in particular to be aided by the Albulan waters and the *leucogaei fontes*, a spring located between Puteoli and Neapolis, suggests an external application, perhaps in the form of a soak or wash, much in the way that Augustus used the waters.[48] Vitruvius says that alum springs are useful because they warm the body through the pores and are able to cure paralysis.[49] He also recommends sulphur springs in order to rid the body of poisonous humours.[50] Although he does not specify the method, it should be assumed that he intends an invalid to bathe in the waters. This can be inferred because he refers to the heating effect of the water on the muscles as well as the ability of the water to enter through the skin or pores.

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[46] Caelius Aurelianus *Chron.* 5.10.126.

[47] Caelius Aurelianus *Chron.* 2.3.70. This is further demonstrated by the advice given to place the head under a shower of water and to treat the ears with *dropax*. However, as the aim of the treatment is to rid the body of overall disorders, it is possible that the effects of bathing in spring water were also considered effective even in a localized infirmity such as an earache.

[48] Pliny *HN* 31.6; 31.8.

[49] Vitruvius 8.3.4.

[50] Vitruvius 8.3.4.

Archaeological Corroboration of Methods of Water Use

As spas were variations on regular bathing establishments, it is not surprising that bathing activity played such a significant role in spa treatment. The presence of large pools helps to clarify some of the unclear terminology of bathing methods. As the pools were such a central feature in a spa establishment, it is likely that therapies focused on the possibilities of nearly complete immersion. The large pools were especially suited to immersion therapy as they were generally 1.2 to 1.5 meters in depth. The importance of this method of therapy resulted in the need for facilities which were large enough to serve the clients. Spas such as Aquae Tauri, Aquae Caeretanae, and the baths at San Calogero are architecturally focused on the large rectangular pools.

There is archaeological support for the methods of both standing and sitting in the waters. Benches and steps located at the sides of many of the large rectangular pools were ideal for allowing the process of soaking in the water without requiring a user to become completely wet. The bench in the smaller rectangular pool at Aquae Tauri enabled the bather to spend a long but non-strenuous period of time in the waters. At spas like Aquae Statiellae and Aquae Apollinares, steps which allowed access into the pools may have functioned in a similar manner. There are also smaller pools that would have been adequate for a single person. These are designed to allow an individual to sit in fairly deep water in much the same way as in the earlier hip-baths. Pools of this kind are found at Aquae Vescinae.

Swimming, although not a preferred method of treatment according to the literary sources, may have had a somewhat larger role in thermal-mineral usage than the written evidence suggests. The large pools, aimed primarily at providing adequate means for immersion, would have also sufficed to allow a fair amount of physical exercise in the form of swimming. Exercise formed part of the Roman idea of regimen and health[51] and as such, would have played some role in spa treatments. The pools are not deep enough or long enough to suggest that the swimming was anything more than gentle controlled activity.

Another method of using the waters finds confirmation in the archaeological record in Italy. At Aquae Caeretanae and the baths at San Calogero, water was discharged from pipes that were accessible to an individual who might have tried to direct its flow on an afflicted part of the body. This suits Caelius Aurelianus' description of playing a stream of water on an injured area.

Archaeological evidence for drinking at baths is provided by some of the finds associated with spas. Among these are the many silver vessels that were recovered as votive offerings from the spring at Vicarello.[52] The glass flasks with scenes of Baiae (fig. 55) and Pozzuoli may have been used for drinking spring water or even for taking away a small amount.[53] These objects, like the many small cups from Bath[54] and the numerous drinking vessels from Aquae Helveticae,[55] could have been used for consuming thermal-mineral waters at a spa. They may have also have been souvenirs of visits and, as such, would have beeen particularly appropriate for a treatment which centred on drinking the water.[56]

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[51] See Ralph Jackson, *Doctors and Diseases in the Roman Empire* (London, 1988), 32-34.

[52] Antonia Maria Colini, "La stipe delle acque salutari di Vicarello," *Rendiconti della Pontificia Accademia Romana di Archeologia* 60 (1968): 35-60.

[53] On these flasks, see Chapter 3, footnote 7. That these vessels served as souvenirs is suggested by locations in which they were found. Their find-spots include a grave at Piombino (ancient Populonia), the catacombs outside of Rome, a tomb in Ampurias, Spain, a mine (possibly a burial) at Odemira, Portugal, in the via dei Vigili at Ostia, Tunisia, and a site in Bootham, York.

The practice of using vapours from natural hot springs as part of the healing process is confirmed by the presence of chambers which functioned as sweating rooms. In Baiae, rooms have been found cut directly into the hills above the bathing establishment which would have met the requirements for dry heat sweating. At Aquae Tauri, the small circular chamber with a central pool allowed sweat to be elicited from the hot temperature of both the water and the air. A similar arrangement is found at San Calogero.

Overall, the architectural and physical evidence for the use of spas supports the literary information. The architecture of Italian spas was designed for the adaptability and variation that were essential in determining the appropriate course of action for a visitor at a thermal-mineral centre. Unlike ordinary bathing routines, spa bathing was based on multiple possibilities of using the waters. This leads to different treatments for similar or the same disorders as well as to identical treatments for varying problems; the

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[54] M. Henig et al. "The small objects," in Cunliffe 1985, 5-36.

[55] *AE* 1893, no. 59; *AE* 1966, no. 610; *AE* 1980, no. 621.

[56] Other artifacts which point to the practice of drinking spring water include a silver vessel from Castro Urdiales in Spain (fig. 27), decorated with a scene depicting spring water being bottled, transported, and consumed; and a silver handle from Northumberland which shows spring water being poured into a cup and consumed. See F. Baratte, "La coupe en argent de Castro Urdiales," in Chevallier 1990, 43-54; Ralph Jackson, "Waters and Spas in the Classical World," in Porter 1990, 12.

recommendations of Caelius Aurelianus especially demonstrate this. A consequence of this aspect of healing by using thermal-mineral waters is that at any single spa, a wide range of facilities needed to be available to fulfill the needs of a client or visitor.

Chapter 6

The Clientele at Spas

Drawing upon literary evidence, inscriptions, and archaeological remains, this chapter clarifies the nature of the clientele who visited these institutions.[1] The main sources of information are the texts of the Latin and Greek authors and the relevant epigraphic material. Four separate groups of users can be identified: 1) the emperors; 2) the upper strata of Roman society, including the senatorial, equestrian, and decurial classes, and freedmen with exceptional wealth; 3) the *familia Caesaris*; 4) the lower strata, including the free-born, freedmen, and slaves.[2] Because of the varying nature of information available for the different classes in Roman society, this chapter is divided into three sections. The first presents information largely drawn from the literary material and accordingly is concerned mostly with the upper classes. The second section focuses almost entirely on the epigraphic evidence and presents a discussion of the range of visitors present at spas.

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[1] For the users of spas, see Yegül 1996, 137-138; Jackson 1990, 5-7; Houston 1992, 367; Di Capua 1940, 54-57; McKay 1988, 155-157.

[2] For the social system of the Early Empire, see Géza Alföldy, *The Social History of Rome* (London, 1985), 95-156; also, Peter Garnsey and Richard Saller, *The Roman Empire* (London, 1987), 107-125.

PART ONE

Baiae as a Healing Resort for Emperors

The interest of the emperors in the area of Baiae was considerable, as D'Arms' still unequalled survey of their properties and building activity attests.[3] The emperors, together with the wealthy of Roman society, keenly desired the attractions of the area and they sought respite in the pleasant and peaceful climate in their many luxurious estates. Although the area around Baiae remained a popular spot for the emperors, its function as a place to recover health seems to have been compromised by its very indulgent and leisurely atmosphere.[4] Yet one of the compelling reasons for visiting the area must have been the possibility of obtaining improved health from the resources of the hot springs.[5] Although this is not clearly stated in the texts, the fact that the emperors tended to visit Baiae in times of of ill-health makes it quite likely. Of the following examples, only Tiberius and Hadrian had clear motivation for seeking the curative powers of the baths; Gaius, Nero, and Marcus Aurelius each seem to have used thermal-mineral baths, but the reasons for doing so may have had as much to do with leisure as with health.

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[3] For a review of imperial activity on the Bay of Naples, see D'Arms 1970, 72-115.

[4] On the degenerate behaviour at Baiae: Cicero, *Cael.* 15.35; Propertius 1.11; Seneca *Ep.* 51; Martial 1.62. D'Arms suggests that Augustus' disapproval of L. Vicinius' visit to his daughter Julia at Baiae was due to his disdain of the loose conduct at the resort rather than the actual visit. See D'Arms 1970, 77 no. 22 and 23.

[5] On the multi-function of Baiae as a resort, see, Yegül 1996, 160 who writes: "Baiae, with its mild climate, verdant vegetation, and seaside attractions, combined the elements of a hydro-therapeutic center with those of a recreational one." Also, di Capua 1940, 139-140.

Tiberius died at the former villa of L. Lucullus in A.D. 37 in Misenum.[6] This is one of the villas built by C. Marius who was known to have visited the Baian region with hopes of restoring his health. Tiberius' death there is somewhat surprising. Tacitus reports that Tiberius, after moving around, settled at this villa. Suetonius, however, says that he tried to return to Capreae, but storms and poor health prevented him from making the voyage.[7] It seems probable that when his condition weakened, he chose this particular villa in the hope of finding better health from the nearby hot springs.

Gaius is not reported explicity to have used the thermal-mineral spas of Baiae, but he certainly frequented the area. His most famous exploit in the region was the construction of a bridge made of boats which stretched across the water from Baiae to Puteoli.[8] He also spent leisurely time in the many imperial estates of the area.[9] Josephus gives an account of Gaius at Baiae. In his description, he emphasizes the imperial residences and the natural curative hot baths. Because of Josephus' choice of detail, the impression created is that the emperor was present at the resort in part to use the baths.[10]

Suetonius relates that Nero had a great interest in the hot springs of Baiae; in an attempt to harness the resources of the thermal-mineral waters, he began construction of an enormous covered and colonnaded *piscina* that was to extend from Misenum to Lake

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[6] Plutarch *Marcellus* 34.2; Phaedrus 2.5.18; Tacitus *Ann.* 6.50.2.

[7] Suetonius *Tib.* 73.1.

[8] Suetonius *Gaius* 19.2; Dio Cassius 59.17.5.

[9] Suetonius *Gaius* 37.2; Philo *Leg. ad Gaium* 29.185-186.

[10] Josephus *AJ* 18.248-249.

Avernus.[11] Although the enterprise has probably been exaggerated, its existence is confirmed by the representation of a *stagnum Neronis* on glass flasks which show details of the topography of the region.[12] Nero must have been well acquainted with the benefits of thermal-mineral water since he was also eager to have Albulan sulphur water flowing in his baths in his palace in Rome.[13] Presumably the large *piscina* (or *stagnum*) which the emperor planned was designed to make available the beneficial spring water.

Hadrian, increasingly debilitated by a lingering disease, is reported to have left Rome and later died while in Baiae.[14] Although he may have chosen Baiae as his destination because the imperial villa there guaranteed a comfortable place to spend his final moments, it seems more likely that he continued to maintain some hope of recovery and believed that it might be acquired in the resort.

From the letters of Fronto, we know that Marcus Aurelius spent at least some time at Baiae. The emperor does not appear to have particularly enjoyed it, referring to his stay in *hoc diuturno Ulixi labyrinto*.[15] Fronto himself also visited Baiae and claimed that the natural heating arrangements at the spa were superior to any artificial system of bathing.[16] In neither case is any suggestion given that the resort functioned in a curative role, yet Fronto certainly took advantage of the pleasure of the baths.

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[11] Suetonius *Nero* 31.2.

[12] D'Arms 1970, 98-99; for the flasks, see Chapter 3 footnote 7.

[13] Suetonius *Nero* 31.2.

[14] *SHA Hadrian* 24.1-25.7; *Anton. Pius* 5.1; *Marc. Anton.* 6.2.

[15] Fronto 1.4.

The Emperors at Spas Other than Baiae

According to Suetonius, Augustus made regular use of water from the Albulan springs for his muscles.[17] The relief obtained from the spring water, together with Antonius Musa's success at treating the emperor with cold water, helped to ensure that thermal-mineral water therapy became a widely accepted form of cure.[18] Confirmation of this is found in Horace who complains that because of the obvious benefits of the new type of treatment, the familiar hot springs of Baiae were no longer as desired as previously. He laments that new spas must now be found.[19]

One of the places which attracted Augustus' attention was the source of the river Clitumnus. The sacred stream was especially celebrated for its white sacrificial cattle.[20]

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[16] Fronto 1.11.

[17] Suetonius *Aug.* 82.2.

[18] It interesting to note that Dio Cassius recounts that when Marcellus, Augustus' nephew and apparent heir, was given the same treatment by Antonius Musa, he did not recover and shortly afterward died. Clearly, the success obtained for Augustus outweighed any incredulity that there might have been for this type of therapy. See Dio Cassius 53.30.4.

Marcellus died in 23 B.C. while at Baiae, probably in the imperial villa of Octavia, his mother, sister to Augustus. See Propertius 3.18 and D'Arms 1970, 77.

[19] Horace *Ep.* 1.15.

[20] Vergil *Georg.* 2.146; Propertius 2.19.25; Statius *Sil.* 1.4.128.

Pliny the Younger reports that Augustus presented the area to the people of Hispellum.[21] According to his letter, the town then provided bathing facilities and lodgings free of charge to visitors. A number of dwellings were located along the river's banks. Suetonius records that Caligula visited the spring in A.D. 39.[22] Although Clitumnus was not specifically known for its healing capacities, the presence of springs, baths, and lodgings together with a number of shrines dedicated to a variety of divinities points to the possible use of the area as a spa.[23]

In addition to Nero's building endeavours at Baiae, Suetonius reports that he tried to supply the Domus Aurea at Rome with water brought from the springs of Albula.[24] It is not clear how the water reached Rome, but the transport of spring water by wagon is known from a silver cup from Castro Urdiales in Spain (see fig. 27).[25] Alternatively, it may have been transported by a still-unidentified aqueduct.

Vespasian was accustomed to spend his summers in the region of Cutiliae and Reate, the land of his birth.[26] In A.D. 79, he became ill in Campania. Rather than seek out Baiae or Aquae Sinuessanae, he returned to Rome. He then travelled to his villa and sought relief by using the cold waters of Aquae Cutiliae, a similar treatment to that which had previously proved successful for Augustus. Suetonius and Dio Cassius imply that Vespasian used spring waters routinely to alleviate the discomfort of gout.[27] On this occasion, the springs did not afford a cure and too much cold water is said to have damaged Vespasian's intestines. He was suddenly taken by a fit of diarrhoea and died standing, held up by those around him. Titus died in the same place as Vespasian.[28] Plutarch says that he too was victim to a misuse of bathing.[29]

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[21] Pliny *Ep.* 8.8.

[22] Suetonius *Gaius* 43.

[23] Pliny says that the site is known for the prophetic powers of the god of the river Clitumnus. (*Ep.* 8.8) This kind of dual function of oracle and healing powers is also seen in the waters of Aponus which were famous for the powers of the oracle present there. See Suetonius *Tib.* 14.

[24] Suetonius *Nero* 31.2.

[25] Baratte 1990.

[26] Suetonius *Vesp.* 24.

Another spa which benefitted from imperial benefaction was Aquae Tauri. This spa must have been developed before A.D. 79 since Pliny the Elder mentions the *Aquenses cognomine Taurini* in his list of sites in Etruria.[30] It was approximately three kilometres north-east of the port town of Centumcellae, where an elaborate harbour was constructed on Trajan's orders in A.D 106-107, at which time the spa was probably extended as well.[31] This is supported by the discovery of a brick stamp at the baths marked with Port(us) Trai(ani).[32] Further architectural modifications occurred during

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[27] Suetonius *Vesp.* 24; Dio Cassius 66.17. On Vespasian's death, see B.W. Jones, *The Emperor Titus* (London, 1984), 114, 154-155. .

Josephus reports that Vespasian visited a spa near Judea, in the town Ammathus. (Josephus *BJ* 4.11) On thermal baths in the texts of Josephus, see Samuel Kottek, *Medicine and Hygiene in the Works of Flavius Josephus* (Leiden, 1994), 136-137.

[28] Dio Cassius 66.26; Suetonius *Titus* 11.

[29] Suetonius *Titus* 11; Dio Cassius 66.26; Plutarch *De tuen. san.* 3.

[30] Pliny *HN* 3.8.

[31] Pliny *Ep.* 6.31.

[32] Brick stamp from the baths: crescent-shaped: Port(us) Trai(ani). See Chapter 3, footnote 21.

Hadrian's reign - perhaps one of many building projects the emperor promoted in cities of Italy.[33] An incident involving Commodus occurred at Centumcellae. The twelve year old future emperor is reported to have ordered his bathkeeper to be burned in the furnace of the bath because the water was too cool.[34] Although it is possible that this episode may have occurred at the imperial villa near Centumcellae, it may be the case that the baths referred to are those at the spa complex.[35]

In late antiquity, Aquae Aponi took on a greater importance for King Theoderic.[36] Cassiodorus wrote a letter on the king's behalf to the architect Aloisius regarding renovations to the bath-buildings.[37] Because Theoderic's court was located in Ravenna rather than Rome, the spas of central Italy could no longer conveniently serve the king's needs. He may have been interested in establishing a resort based on thermal-mineral baths within a close range, in much the same fashion as emperors had earlier promoted Baiae, Aquae Albulae, Aquae Cutiliae, and Aquae Tauri.

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[33] On Hadrian's interest in civic building, see Mary Boatwright, "Hadrian and Italian Cities," *Chiron* 19 (1989): 235-271.

[34] *SHA Comm.* 1.9.

[35] On the imperial villa at Centumcellae, see Pliny *Ep.* 6.31. Whether the baths of Aquae Tauri are the same as the imperial villa is not clear. In support of this view, see Werner Heinz, "Die Terme Taurine von Civitavecchia - ein römisches Heilbad," *Antike Welt* 17, no.4 (1986): 25. Rejecting this, see Mario Torelli, "Civitavecchia (Centumcellae)," *EAA* (Rome, 1973), 233- 234.

[36] The thermal-mineral waters were known variously as *fons Aponi*, *Aquae Aponi* or *Aquae Patavinae*. eg. Pliny *HN* 2.103.227; Martial 6.42; Suetonius *Tib.* 14.3; Avitus *Anth. Lat.* 36.

[37] Cassiodorus *Var.* 2.39. See Appendix 4.

The Upper Classes at Baiae and the Surrounding Area

The earliest recorded owner of a luxury villa in the Baian region was C. Marius, who possessed an estate near Misenum.[38] It seems entirely likely that he made use of the hot springs in the area. In 88 B.C., towards the end of his career, when he was attempting to gain command of the campaign against Mithridates, his opponents urged him to go to Baiae to restore his failing health. Their intent was to diminish his reputation by emphasizing his infirmity as well as to get him out of the way.[39] We also know that on at least one occasion, he travelled in a weakened state from Naples to Baiae, where he was presumably hoping to recover from ill-health.[40]

Cicero owned two villas close to Baiae, one at Cumae and the other at Puteoli.[41] He owned a third villa at Pompeii and travelled between this city and the other two by boat.[42] He also had a *villa pusilla* at Sinuessa.[43] Owning properties in these locations was already considered prestigious by the first century B.C.[44] As early as 74 B.C., Cicero claims to have joined the visiting crowds who were present for the waters.[45] But he seems not to have used the baths very often. In a letter to Atticus from July 61 B.C., Cicero reports that Clodius had incorrectly accused him of using the hot waters at Baiae.[46] When he wrote to Varro in 46 B.C., he suggested that pretending to visit as a bather would not seem very plausible to their political opponents.[47] On the whole, he preferred to avoid the throngs of visitors who came to Baiae in the early summer.[48]

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[38] D'Arms 1970, 23-28.

[39] Plutarch *Marius* 34.2.

[40] Cicero *QFr.* 12.10.

[41] D'Arms 1970, 198-200.

[42] Cicero *Att.* 14.16.

[43] Cicero *Fam.* 12.20. Although this lodging may have been simply a convenient stop-over for the wealthy landowner as he travelled between his estates, it is quite likely he was able to use the hot springs of the new development at Sinuessa. On the prosperity of Sinuessa from the early second century B.C. and the development of the Thermae Sinuessanae, see Paul Arthur, *Romans in Northern Campania* (London, 1991), 60-62.

[44] D'Arms 1970, 39-71.

Many of the visitors to Baiae during the last years of the Republic may have used the thermal-mineral baths. Hortensius, the wealthy and prominent orator who was consul in 69 B.C., owned a villa at Bauli, a town located about two kilometers north of Misenum.[49] Cicero remarks on his visit when he was ill.[50] It seems quite likely that Hortensius came to his villa to derive some healthful benefits from the nearby hot springs, as well as benefitting from the rest and relaxation of a comfortable villa. In 49 B.C., Antony is criticized by Cicero for sending away a group of people waiting for an appointment because he wished to bathe while at Cumae.[51] Varro, who owned a villa at

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[45] Cicero *Planc.* 65.

[46] Cicero *Att.* 1.16.

[47] Cicero *Fam.* 9.2.5.

[48] Cicero *Att.* 21.40.3.

[49] D'Arms 1970, 181.

[50] Cicero *Att.* 5.2.

[51] Cicero *Att.* 10.13.

Cumae, knew about the odours of sulphur and alum springs.[52] That he personally may have used them can be inferred by his phrase *in usum nostris*.[53] A visit to the hot springs may also have given an additional purpose to Caesar's stop in 45 B.C. at Puteoli and Baiae.[54]

Seneca passed some time in A.D. 63 in the Campanian countryside and at some point, he visited Baiae, apparently spending only a single day there.[55] He expresses strong opinions about the moral laxity of the resort. Although he believes that there might be some benefits to be gained from the natural setting of the resort, these do not outweigh the overall improprieties.[56] He even criticizes the naturally heated steam baths, saying that sweating should be the result of hard work.[57] Yet, in a different letter he claims that the villa once owned by P. Servilius Vatia (*praetor* in 25 B.C.) had an advantageous location: it was close enough to use the amenities of Baiae, but far enough to avoid the inconviences.[58]

The epigrams of Martial offer valuable insight into the use of spas during the early Empire. To appeal to the group of wealthy Romans for whom he wrote, he expresses strong attitudes about many aspects of life in Roman Italy. His descriptions of activities and people, in spite of his opinions and biases, produce an unusually complete picture of the upper classes of society.[59] Not surprisingly for someone associated with the richest of the upper class, one of his favourite themes is life at Baiae. He presents an image of the luxurious and, at times, infamous activities for which the resort was renowned. The formerly chaste Laevina often came for the *Baianis aquis* and, as a result, succumbed to the temptations of the place.[60] Canius Rufus, a poet, friend of Martial and fellow Spaniard, is thought perhaps to have gone *ad aestuantis Baias*.[61] Castricus, another poet, swims in *canaque sulphureis nympha aquis*.[62] While little indication is given that visitors are seeking the area for purposes of health, using the thermal-mineral baths was certainly a primary reason for coming to Baiae. These people are hoping for relaxation and pleasure, a difficult pursuit without abundant financial resources.[63] Martial himself had experienced the baths of Baiae and offers high praise for the beauties of the coastal resort.[64] Yet he was not enticed enough by the pleasures to wish to stay longer than a brief visit and, later, rejects Baiae completely as a desirable spot to live.[65]

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[52] Varro *Ling.* 5.25.

[53] Varro *Ling.* 9.69.

[54] Cicero *Att.* 13.52.

[55] Seneca *Ep.* 51.1.

[56] Seneca *Ep.* 51.4.

[57] Seneca *Ep.* 51.6.

[58] Seneca *Ep.* 55.7.

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[59] For a description of Martial's attitudes to various subjects, see J.P. Sullivan 1991, 159-169.

[60] Martial 1.62; see P. Howell, *A Commentary on Book One of the Epigrams of Martial* (London, 1980), 253-257.

[61] Martial 3.20.

[62] Martial 6.43.

[63] Martial 1.59; see Howell 1990, 245-249.

The thermal baths of Baiae continued to be used by upper-class Romans in late antiquity. Symmachus' visits to Baiae were frequent and are often mentioned in his letters.[66] In a letter from A.D. 396, Symmachus writes that although he is enjoying his visit at his villa in Bauli, he is not engaging in the normal activities of a sojourn there, which include *frequentatio balnearum*.[67] Earlier, in 375, he had been concerned about the increase of noise at Baiae from crowds and had left for Naples.[68]

In late antiquity, Baiae's fame reached far and wide. In the fourth century, Ausonius compares Baiae to the pleasure of the waters of the Moselle River.[69] Eunapius proclaims that the baths of Gadara in Syria can only be compared with those at Baiae.[70] Sidonius Apollinaris holds Baiae up as the standard by which to compare baths at Avitacum.[71]

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[64] Martial 11.80; see N.M. Kay, *Martial Book XI* (London, 1985), 236-238.

[65] Martial 4.57; 6.43.

[66] Symmachus *Ep.* 1.7; 1.8; 1.48; 2.17; 7.72-73. The main edition for Symmachus is Otto Seeck, *Q. Aurelii Symmachi*, Berlin, 1961 (*Monumenta Germaniae Historica* t. 6).

[67] Symmachus *Ep.* 8.23.3. On the properties of Symmachus at Baiae and surrounding towns, see D'Arms 1970, 226-229.

[68] Symmachus *Ep.* 1.3.3.

[69] Ausonius *Mos.* 8.341-348.

[70] Eunapius *Vit. Soph.* 26. For the baths of Hammat Gader, see Y. Hirschfeld and G. Solar "Excavations at Hammat Gader," *IEJ* 31 (1981): 197-219.

[71] Sidonius Apollinaris *Carm.* 18.12.

Still later, in the early sixth century, Cassiodorus records a letter from King Athalaric to a high-ranking official who requested a leave of absence to go to Baiae to restore his health.[72] The letter outlines the virtues of the resort, especially emphasizing the good climate and works of nature. A person will become *salubrior* from using the baths, especially because they are heated naturally.[73]

The Upper Classes at Spas Other than Baiae

Several other spas are attested in the written record. One which was certainly important to the imperial family is Aquae Sinuessanae. According to Dio Cassius, Agrippina sent Narcissus, the important and favoured freedman of Claudius, to Campania to treat his gout by taking the waters.[74] This action allowed her to carry out her plans of poisoning the emperor. Tacitus offers a slightly different version and reports that Narcissus, suffering anxiety, sought out the gentle climate and healthful waters at

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[72] Cassiodorus *Var.* 9.6.

[73] In fact, this delight in Baiae continued well into the Middle Ages. *De Balneis Puteolanis*, written by Peter of Eboli, describes the many establishments available for various ailments in the Baian area. The text makes it quite clear that vast numbers of people had an interest in visiting Baiae, even up to the time when the thermal-mineral springs were destroyed by seismic activity in the mid-sixteenth century. Furthermore, the illustrations preserved on the manuscripts show many people engaged collectively in thermal-mineral bathing. As very little indication of social rank (primarily because everyone undressed) is evident in the drawings, it appears that the sense of class and social order played little of a role. For more on the manuscript tradition and the drawings, see Raymond Clark, "Peter of Eboli, 'De Balneis Puteolanis': Manuscripts from the Aragonese Scriptorium in Naples," *Traditio* 45 (1989-1990): 380-389; and Yegül 1996, 148-155.

[74] Dio Cassius 61.34.4.

Sinuessa.[75] Another incident at Aquae Sinuessanae involving the imperial family occurred in A.D. 69. After Nero's death, Tigellinus, who had been appointed praetorian prefect in 62, fled to his estates *apud Sinuessanas aquas*. When confronted by a messenger sent by Otho, Tigellinus immediately committed suicide.[76]

In his epigrams, Martial identifies Aquae Sinuessanae as a location where visitors, most of whom seem to have been wealthy upper-class Romans, displayed immoral or outrageous behaviour. He encourages an unfaithful wife, Paula, to visit the springs with the excuse of needing a cure for hysteria.[77] Because this ailment was also believed to be cured by sexual intercourse, Martial's suggestion reinforces a suspicion of the adulteress' lewd behaviour. The advice that she should go alone to the baths to escape her ever-present husband seems to imply that mixed bathing in thermal-mineral spas did not take place, despite the Elder Pliny's comment that men and women both frequented the baths at Sinuessa.[78] On another occasion, an overly intoxicated Philostratus dies after falling down a flight of stairs. This happened on his return from an evening party at the waters of Sinuessa.[79] Martial implies that his excessive behaviour led to fatality, a condition which might have been avoided by a more judicious use of the waters.

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[75] Tacitus *Ann.* 12.66.

[76] Tacitus *Hist.* 1.72; Plutarch *Otho* 2.3.

[77] Martial 11.7; see Kay 1985, 76-81, 222-223.

[78] Pliny *HN* 31.4. For women and mixed bathing, see R. Ward, "Women in Roman Baths," *HTR* 85 no. 2 (1992): 125-147; E.W. Merten, *Bäder und Badegepflogenheiten in der Darstellung der Historia Augusta* (Bonn, 1983), 79-100.

[79] Martial 11.82; see Kay 1985, 240-241.

Rutilius Namatianus describes the pleasures of the hot springs at Aquae Tauri in a poem about the prefect's journey from Rome to Gaul in A.D. 417.[80] No suggestion is given that Rutilius is ill in any way except perhaps from exhaustion from travelling. As a high-ranking official, he belonged to the world of the upper-class who found satisfaction in bathing with hot spring water.

PART TWO

The Inscriptions

Because the literary texts are so heavily biased towards the upper strata of society, the inscriptional evidence is especially important for illustrating the activities of the lower classes at spas. Nearly all of the individuals identified at spas are known from dedicatory votive inscriptions; a few are related to the building of public works. Only a small number of funerary inscriptions are included. This is not altogether surprising as it would have not been appropriate to advertise the ill-fate of a visitor at a place where healing was specifically promoted.[81] From the epigraphic evidence, then, it would appear that spas enjoyed remarkable success. Such an interpretation should, however, be treated with caution. The absence of funerary inscriptions, while partially explainable in terms of circumstances, may also reflect a bias in the actual sampling of inscriptions. In order to identify an inscription as being related to a spa, it must either 1) name the relevant location or divinity or 2) have been found either in the spa or at least in very close proximity. Because funerary inscriptions are generally dedicated to chthonic gods (*dis manibus*) rather than to those of healing, and because the burial area would presumably not be adjacent to the spa, the likelihood of identifying an inscription which was in fact related to a spa would not be very high.[82] This means that if, say, a visitor failed to recover from an illness and died at a spa, there would be little possibility of knowing that he had been there from an inscription recording his death.

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[80] Rutilius Namatianus 1.249-276. On the poet, see Barry Baldwin, *An Anthology of Later Latin Literature* (Amsterdam, 1987), 267-268.

[81] The lack of funerary inscriptions is, however, surprising in that the majority of texts are furnished by tombstones. On this see Richard P. Saller and Brent D. Shaw, "Tombstones and Roman family relations in the Principate: civilians, soldiers and slaves," *JRS* 74 (1984): 124-156. On the general pattern of the increased use of inscriptions, see R. MacMullen, "The epigraphic habit in the Roman Empire," *AJPh* 103 (1982): 233-246; Elizabeth A. Meyer, "Explaining the epigraphic habit in the Roman Empire: the evidence of the epitaphs," *JRS* 80 (1990): 74-96.

Not all spas are represented by epigraphic evidence; even some of those which have been excavated have yielded no inscriptions which may clearly be linked to spa activity. These include Aquae Cutiliae, Baiae, and Puteoli. Additionally, the inscriptions do not necessarily represent a full cross-section of the clientele at spas; only those individuals who had particular reason to make a dedication or who had sufficient financial resources are apparent. A further caution should be made as well regarding the identification of some individuals by their names on inscriptions. In several cases, where no onomastic indicators are evident (e.g. no filiation or indication of slave status) or other information is lacking, a tentative assessment of the social status of a person has been attempted. Because of the inconsistency of naming practices, these individuals (especially free-born foreigners in Italy and slaves) cannot be attributed with certainty to particular a social class.

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[82] On the location of burials, see the standard work, J.M.C. Toynbee, *Death and Burial in the Roman World* (London, 1971), 74-100.

Despite these difficulties, a great deal of information can of course be drawn from the epigraphic material. I do not propose to carry out a full epigraphic study on the inscriptions collected, as this would be well beyond the scope of the current research. Instead, an analysis of the kinds of people who are represented on the inscriptions will shed much light on the users of spas. This section, then, will focus on questions of social status and origins, gender, and occupation.

The Familia Caesaris

It has already been demonstrated that members of the *familia Caesaris* frequented spas as we know from the literary evidence concerning Narcissus at Aquae Sinuessanae in particular.[83] As he was a significant character in the imperial household, it is not unusual to find him in the literary record of events of the first century A.D. There are, however, a number of other individuals that belonged to the *familia Caesaris* who are known to have visited spas. Most of these names belong to freedmen, but there is also a representation of people who were still in the service of the emperor. Many of the individuals are among the highest ranking of the imperial administration and their status as freedmen rather than slave must have allowed them to take these positions.

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[83] See above footnote 74.

At Aquae Albulae, *[C]eladus Aug(usti) l(ibertus)* made a dedication to the divinities of the spring.[84] This may be the same freedman whom Suetonius says that Augustus treated with honours.[85] It is possible that the inscription should be restored as [C]eladus Aug(ustae) (Iuliae) l(ibertus).[86] If this is the case, this dates the inscription to after A.D. 14 whe Livia was adopted into the Julian family and given the title "Augusta." This did not occur until the death of Augustus and was stipulated in his will.[87]

An inscription from a votive relief found at Aenaria provides another example of a manumission by the wife of the emperor. The text of the name reads: *Argenne Poppaeae Augustae Augusti liberta.*[88] In this case, Argenne is the freedwoman of Poppea Sabina, the wife of Nero, and of the emperor himself. This would date the inscription to sometime after A.D. 63, the year in which Poppaea received the title "Augusta" following her marriage to the emperor.[89] Joint manumission which is indicated by both the emperor and an associated woman is known from other early imperial examples, including one naming Tiberius and his mother Livia as Julia Augusta.[90]

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[84] *CIL* 14.3908.

[85] Suetonius *Aug.* 67: *patronus dominusque non minus severus quam facilis et clemens, multos libertorum in honore et usu maximo habuit, ut Licinum et Celadum aliosque.* (cf. *CIL* 6. 8909; 14.3524)

[86] cf. *CIL* 14.3524

[87] Tacitus *Ann.* 1.8.2. See P.R.C. Weaver, *Familia Caesaris* (Cambridge, 1972), 24 no. 1, 28-29, 62-63.

[88] *CIL* 10.6787.

[89] Weaver, 64.

[90] *CIL* 6.4770. On joint ownership and manumission of slaves, see Weaver, 58-72.

From Aquae Sinuessanae comes an inscription dedicated by three freedmen.[91] One of them, *Amemptus / Caes(aris) l.*, belongs to the group of imperial freedmen. The use of the form "Caesaris l." indicates that the event of manumission occurred at an early date as the formula seems to have dropped almost entirely out of use by the Flavians. The date of the inscription is A.D. 71. This would mean that Amemptus would most likely have been freed under Nero or Claudius.[92] That he chose to use the term "*Caesaris*" is not in fact significant as either this or *Augusti* were applied interchangeably at that time. As for the status of the other two names (*Orciviae Phoebes et Rhodini lib.*) which appear on the inscription, it can only be assumed that they too enjoyed a certain amount of prestige. Both Phoebes and Rhodinus were manumitted by a woman with the *gens* Orcivius.

Another inscription recovered from Aquae Albulae records the wife of a high-ranking freedman of the emperor: *Ulpia Athenais / Glypti Aug(usti) / lib(erti) ab epistu/lis uxor.*[93] The use of the gentilicium *Ulpia* makes it likely that she was a freedwoman of

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[91] *CIL* 10.4734 = *ILS* 3868.

[92] If Amemptus had been freed any earlier, he would likely have been in at least his sixties at the time of the dedication of the inscription. That he survived to such an old age is unlikely, as the average mortality rate fell well below 60. See Weaver 103, for the average age of an Imperial slave at the time of manumission who puts it at normally over 30 years of age. For a recent appraisal of the mortality rate, see I. Morris, *Death-Ritual and Social Structure and Classical Antiquity* (Cambridge, 1992), 72-81.

Another well-known Amemptus l. is known from a funerary altar now located in the Louvre. In this case, he was the freedman of Livia. See Toybee 1971, 266.

[93] *CIL* 14.3909 = *ILS* 3892. An alternate reading of the description provides the following: *Ulpia Athenais / M(arcus) Ulpii Aug(usti) / lib(erti) ab epistu/lis uxor* (from *Inscr. Ital.* 595)

Trajan, although it is necessary to maintain the possibility that she was in fact free-born.[94] The husband, *Glyptus Aug. lib.*, is probably the same person recorded on another inscription as *Glyptus Aug. lib. proc.* which would indicate the high status he had obtained.[95] Even without this additional information, his position as indicated on the inscription from Aquae Albulae is one of high status.[96]

At Aquae Tauri, an altar (fig. 53) was found which was dedicated by a freedman of Hadrian, Ἀλκιβιάδης.[97] The inscription indicates the position of the freedman as ἐπὶ κοιτῶνος, or *a cubiculo*.[98] Alcibiades was a well-known freedman of Hadrian's and is attested in several other inscriptions. His full name was P. Aelius Alcibiades.[99] His presence as a close associate of the emperor may confirm the continuing interest Hadrian had in the spa following Trajan's renovations.

Two other members of the *familia Caesaris* are known from an inscription dedicated *genio Aquarum Vescinarum: Antonius et Eugenes servi dispensatores.*[100] The dedication made on behalf of Geta and Caracalla and their mother Julia Augusta (= Julia

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[94] See Weaver, 129-133.

[95] *CIL* 6.37763b = *ILS* 9025.

[96] *DE* s.v. *epistula*, no. 4; On the position see Weaver, 259-266.

[97] *SEG* 2.529. Cited by Weaver, 82.

[98] For further information on holders of this position, see, J. Michiels, "Les *Cubicularii* des empereurs romains d'Auguste à Dioclétian," *Musée Belge* 6 (1902): 364-387.

[99] cf. *CIG* 2947 = *ILS* 8857; *SEG* 1.441. Stein, "P. Aelius Alcibiades, 134," *PIR*^{2} 1.1 (Berlin, 1933), 20; Rhoden, "Aelius, 19," *RE* 1, ser. 1 (Stuttgart, 1893), 490.

[100] *AE* 1914, no. 217.

Domna) can be dated to between A.D. 209 to 211. The two dedicants were among the highest in the ranks of imperial administration. *Dispensatores*, in charge of disbursing and handling large sums of money, had a great deal of responsibilty.[101] Weaver demonstrates that the normal age of appointment to the position would have been during the thirties and manumission occurred correspondingly later, probably no earlier than in the forties, at which time higher freedman posts could be acquired.[102] That Antonius and Eugenes are still *servi* suggests that they were between thirty and forty years of age. Arthur suggests that this inscription also indicates that Aquae Vescinae had become part of the imperial *patrimonium* by this time.[103] It is possible, however, that the *dispensatores* did not make their dedication as a state function, but rather as a personal act of devotion. Their presence does, in any case, hint at an imperial interest in the spa.

There are two other inscriptions from spas which identify members of the *familia Caesaris*, but neither is securely datable. The first, recovered from Aquae Caeretanae, names *Florentinus Aug(usti servus).*[104] Florentinus is certainly a known name, but it reveals little about the individual.[105] As far as Florentinus' status, all that can be established with certainty is that he was an imperial slave. Tumolesi suggests that the style of the letters on the inscription recalls that of writing found on walls at Pompeii, thus giving a date in the early imperial period. This seems to me to be rather weak evidence for dating the inscription as the mediums are so clearly different. As there are, however, no other intrinsic points on which to assign a date, and because an early imperial date corresponds to the information Strabo records about the site, her suggestion, in the end, seems plausible. In addition, it is possible, just as can be inferred from other inscriptions demonstrating the presence of the *familia Caesaris* at spas, that the emperor may have had some interest in this spa.

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[101] *DE* sv. *dispensator* 1920-1923.

[102] Weaver, 225-226.

[103] Arthur, 58.

[104] Cosentino and Tumolesi 1989, 105-112 = AE 1989, no. 305.

[105] I. Kajanto, *The Latin Cognomina* (Helsinki, 1965), 189, 223.

The last inscription that was made by a member of the imperial family as a freedman was dedicated *Apollini sancto* by *Eros Aug(usti) lib(ertus) proc(urator)* and was found at the Bagni di Stigliano.[106] In this case, the individual chose not to take the *nomen* of the emperor. This is not altogether surprising; over one out of every three Imperial freedmen omit their *nomen* on inscriptions.[107] Although this might not be unusual, it does present difficulties in trying to determine a date for the dedication. The position of *procurator*, however, offers more information at least about the individual, for the emperor appointed men to these offices who belonged to either the equestrian or freedman classes. In the case of a freedman, obtaining the office could not be expected until at least ten to fifteen years after manumission, and it was the highest rank among the *Augusti liberti*.[108] It is likely, then, that Eros Aug. lib. was at least in his mid-forties when he acquired his position.

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[106] Gasperini 35, no. 27.

[107] Weaver, 37-40.

[108] Weaver, 267-281.

Roman citizens

The next group of inscriptions represent Roman citizens who made use of various spas. Several of them are known from other contexts and others are able to be identified more specifically with a limited amount of certainty from the titles used in their names. What is clear from these inscriptions is that a wide range of individuals was present at spas and that they fall into several different categories. The first people described are those from a small group of individuals about whom there is additional information known, either from titles and positions in the given inscription or from other sources. Then follows those individuals who have indicators that identify them as part of the military. Lastly, there are a number of names recorded for which there is virtually no other information other than what can be gleaned from the inscription itself.

The earliest inscriptional evidence for an important personnage with a connection to a spa is *Q. Marcius P. f. Sergia Rex* from an inscription recovered at Aquae Aponi.[109] As his identification has already been discussed,[110] it will suffice to comment that although Q. Marcius seems to have been associated with the early period of development at Aquae Aponi, it is difficult to clarify his real interest in the spa.

Another figure named in an inscription from Aquae Aponi is *C. Cluentius C. f. Romul(ia) Proculus Ateste aedilis duum(vir) quaestor aerari bis pontifex.*[111] Although the *gens* is not very well attested in Venetia, it is documented in two inscriptions from

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[109] *CIL* 1.2172.

[110] See Chapter 2, page 40.

[111] *CIL* 5.2785.

Verona and Brescia.[112] The most important of C. Cluentius titles are included on his dedication (*Aedilis, Duumvir, Quaestor aerari, pontifex* [twice])and they show that he was an important local magistrate.

A third inscription from Aquae Aponi names *Q. Magurius Q. f. Fab(ia) Ferox lusor epidixibus et cetaes I II III in grege Veturiana quae et Iuniorum.*[113] The *gens* Magurius is known elsewhere in Venetia. It is considered in origin to be Celtic, undoubtedly reflecting Q. Magurius' background. The exact nature of the titles present in the inscription is unclear, but as a *lusor epidixibus* he seems to have excelled at some manner of performance, perhaps in drama or oratory.[114] Just as with Q. Marcius, Q. Magurius' exact reason for interest in the spa is not certain. The remainder of the text, although somewhat obscure, does, however, indicate that he may have contributed to some aspect of construction and development at the spa.[115]

Part of an inscription from Aquae Albulae reads: *C. Iulius Sp. f. Iulianus / Proculus Sacerdos / Matri(s) D(eum) M(agnae) Id(aeae).*[116] Regarding C. Iulius' name, little can be said. Proculus is the most common cognomen derived from a praenomen.[117]

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[112] *CIL* 5.3569 and 4570.

[113] *CIL* 5.2787.

[114] A *lusor* is a player or one who plays. *Epidixis* comes from the Greek term ἐπίδειξις, meaning a display, exhibition, or even a declamation.

[115] cf. *ILS* 5202 for suggestions on interpretation of the end of the text.

[116] *CIL* 14.3534.

[117] Kajanto, 40, 176.

His role as priest of the Great Mother confirms he is a Roman citizen. The cult is attested throughout Italy, although not always evenly in location and time.[118]

An inscription found at Lambaesis dedicated to the waters at Aquae Sinuessanae names the entire family of an important official: *T. Caunius Pris[cus] | leg(atus) Aug(usti) pr(o)] pr(aetore) co(n)s(ul). des(ignatus) cum vera uxore et Firmino et Prisca filiis.*[119] The reconstruction of the text is certain as a very similar inscription from Africa also names T. Caunius Priscus.[120] The date of his consulship is A.D. 186. It is unlikely that as *legatus Augusti* T. Caunius would have been able to travel to Aquae Sinuessanae and it is therefore more probable that he visited the spa at an earlier period and perhaps even came from the region.

Military Personnel

At Aquae Caeretanae, *L. Pontilius L. f. Duurus* made a dedication to the divinity of the spring.[121] He is identified as a *signifer* or standard-bearer.[122] The occurrence of Pontilius as a gens is rather rare.[123] Another feature of his name is the spelling of Durus with a double vowel (Duurus) in order to mark a long "u". This is a mark of an Osco-Umbrian dialect.[124] On the basis of this and on paleographic grounds, the inscription can be dated to the first half of first century B.C.

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[118] A second inscription from Aquae Albulae is dedicated to the Isis (*Inscr. Ital.* 592). For a detailed overview of the cult of the Great Mother, see Robert Turcan, *The Cults of the Roman Empire* (Oxford, 1992), 28-74.

[119] *CIL* 8.2583.

[120] *ILS* 3843. Groag, "T. Caunius Priscus, 590," *PIR*^{2} 2 (Berlin, 1936), 133.

[121] Cosentino and Tumolesi 1989, 110-112.

[122] Yann Le Bohec, *The Imperial Roman Army* (London, 1994), 49.

[123] Wilhelm Schulze, *Zur Geschicte lateinischer Eigennamen* (Berlin, 1966), 212, 455.

Another individual who specifically names Aquae Caeretanae is identified on an inscription found in Amelia (Perugia): *P. Scribonius / Proculus (centurio) coh(ortis) / VI vig(ilum).*[125] The *vigiles* were formed by Augustus in A.D. 6 and initially were only open to freedmen.[126] In A.D. 24 Tiberius offered Roman citizenship to anyone who would join. A.D. Duff comments that there is a much higher proportion of *ingenui* to *liberti* from inscriptions of the Early Empire. Paleographically the inscription is datable to the first half of the first century. This would suggest that P. Scribonius should be considered as a free-born Roman.

An inscription found at in the town of Abano, near Aquae Aponi, names *L. Pactum[e]ius Ferox miles legionis XIIII veteranus* as the dedicant to the waters at Aponi.[127] The *gens* is uncommon in the region and is only known from a single inscription from Aquileia.[128] L. Pactumeius indicated that he was a veteran of *leg. XIIII* which was one of the legions formed under Octavian. It is possible that the reason for the inclusion of the indicator of his veteran status is to show that he was fulfilling a promise made earlier while still a soldier. Another veteran from the same legion is known to have been at Ateste.[129] These veterans together with others from *leg. XI*, following the battle of Octavian at Actium, were settled in Ateste.[130] The movements of this legion in the Early Empire generally fluctuated between the provinces of Pannonia and Germany, although there was a period when it was stationed in Britain and for a brief time, it was called to Italy; but it would appear that L. Pactumeius was settled long before these changes.[131]

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[124] Kajanto, 266.

[125] *AE* 1992, no. 599.

[126] On the vigiles, see P.K. Baillie Reynolds, *The Vigiles of Imperial Rome* (Oxford, 1926); A.M. Duff, *Freedmen in the Early Roman Empire* (Oxford, 1928), 140-142; Le Bohec, 22-23; Graham Webster, *The Roman Imperial Army* (Totowa, New Jersey, 1985 3rd. ed), 154.

[127] Lazzaro, 163.

[128] *CIL* 5.1326.

Another soldier together with a friend is known from an inscription found in Burnum, Dalmatia which names Aquae Statiellae: *L. Cassius L. f. / Trom(entina) Marti/alis mil(es) leg(ionis) XI / C(laudiae) p(iae) f(idelis)* and *P. Ulpi(us).*[132] L. Cassius was a soldier of *leg. XI*, originally founded under Caesar in 58 B.C. The addition of the title *Claudia Pia Fidelis* indicates that the date of the inscription must be after A.D. 42, the year in which recognition was granted for the legion's loyalty during the revolt of Camillus Scribonianus at the garrison of Dalmatia.[133]

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[129] *CIL* 5.2497.

[130] Some of the soldiers from *leg. XI* added the title *Actiacus* to their name in recognition of their battle. (cf. *ILS* 2336; *CIL* 5.890, 2389, 2839; *ILS* 2243) See Lawrence Keppie, *The Making of the Roman Army* (London, 1984), 130.

[131] See H.M.D. Parker, *The Roman Legions* (Cambridge, 1928, reprint 1971), 118-168. Also Webster who outlines the movements of the army throughout his book.

[132] *CIL* 3.2833.

[133] Webster, 106.

C. Cassius / Severus / missus ex pr(aetorio) / speculator is known from Aquae Aponi.[134] Although the *gens* Cassius is known widely in the region, this is the only appearance of it specifically at the baths. The position of *speculator* in the Roman army and its development is well-attested in inscriptions.[135] A *speculator ex praetorio* was specifically attached to the Praetorian Guard in Rome.[136] C. Cassius, having served his required sixteen years, had already retired (*missus*) at the time of his dedication.[137]

Probable Ingenui

In addition to the individuals for whom some further identity can be reconstructed, there are a number of names only known from inscriptions. In these cases, the presence of all three elements of the name is used as an indicator of a male's free-born Roman status.[138] This may lead to some false identifications as the status indicators of freedmen in particular and occasionally of individuals of servile origin could sometimes be omitted, but on the whole, this has proven to be a reliable way of assessing the names. The other group of names which can only be considered as probably belonging to this category is of women. It is especially difficult to determine the status of women for two reasons: 1) from an early date, the praenomen was almost always dropped;[139] 2) their status indicators do not occur in this collection of inscriptions. Because of this, I have included women with two names as most likely belonging to this group of *ingenui*.

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[134] *CIL* 5.2784.

[135] See Le Bohec, 51 for a synopsis of this.

[136] Marcel Durry, *Les cohortes prétoriennes* (Paris, 1938) 108-110

[137] J.B. Campbell, *The Emperor and the Roman Army* (Oxford, 1984), 110; A. Passerini, *Le coorti pretorie* (Rome, 1939, reprint 1969), 126 which discusses another *speculator* who had retired but was recalled to service (*CIL* 6.32597).

[138] See J. Sandys, *Latin Epigraphy* (London, 1927, reprinted 1974), 208, who says: "As a general rule, all free-born Romans had three names."

At Aenaria, eight men and one woman fall into this group.[140] Of these eight men, only two show clear filiation.[141] But, as the praenomina of the men in the remaining six cases belong to the standard group of names used by Roman citizens, it is likely that they are correctly assigned. Having said this, it is necessary to point out that several names reflect an origin which is different from their current status. In particular, L. Rantius L. f. Tro(mentina). may be of a Greek ancestry as his name is repeated in Greek on the same inscription.[142] M. Octavius Alexander also has a *cognomen* which is distinctly Greek.[143] This, together with the use of Octavius for a *nomen* strongly suggests a servile origin. A foreign origin is also reflected in the name of P. Dasimius Risea.[144]

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[139] Benet Salway, "What's in a name? A survey of Roman onomastic practice from c. 700 B.C. to A.D. 700," *JRS* 84 (1994): 125.

[140] Males: *C. Metilius Alcimus* (*CIL* 10.6786; *M. Verrius Craterus* (*CIL* 10.6788); *A. Avianius Cilo* (*CIL* 10.6791); *P. Dasimius Risea* (*CIL* 10.6794); *Sex. Fabius C. f. Vol. Gemellus* (*CIL* 10.6795); *M. Octavius Alexander* (*CIL* 10. 6796); *L. Rantius L. f. Tro.* (*CIL* 10.6797). Female: *Folia Herois* (*CIL* 10.6790).

[141] *CIL* 10.6795 and *CIL* 10.6798.

[142] *CIL* 10.6797.

[143] *CIL* 10.6796.

[144] *CIL* 10.6794.

A dedicant by the name of *C. Umbreius Lavican[us]* is attested at Aquae Albulae and he is unidentifiable beyond the information given in his inscription.[145] *C. Claudius / Ti. f. Quir(ina) / Severus* also is known from the spa.[146] A third male, *Cossorius Italus*, is also known from an inscription at Aquae Albulae.[147]

The area around Aquae Aponi has produced a large number of inscriptions in total. Of those which can be positively associated with spa activity and which offer no further information, six men and one woman may be classified as Roman citizens.[148] Two of the *gentes* are attested elsewhere in the region. These are Titius at Padua and Trebius at Aquiliea.[149] The sole woman, although displaying filiation in her name, indicates her low-class background by her cognomen, Chreste.

At Aquae Statiellae, an inscription dedicated by *Q. Salvius Germanius* was found.[150] To judge by his cognomen, the dedicant may have originated in Germania.[151] Another inscription naming *Q. Vettius M. f. Amabilis Trom(entina)* presents one of the few examples of a dedication carried out after the death of the individual.[152] In this case, it is the *heredes* who carried out the deceased's wishes *ex testamento.* The indicated tribe, Tromentina, has a somewhat unusal abbreviation, using the first four letters rather than the standard three. It would appear that Q. Vettius may have originated in northern Italy, the location of his ancestral tribe, and that he ended his life in the province of Tarraconensis, in the city of Caesaraugusta where the inscription was found. This may explain the four letter abbreviation, as it may be that a local stone-cutter was unfamiliar with the name. At any rate, Q. Vettius felt that he had sometime in his life been served well enough by the waters at Aquae Statiellae to warrant a dedication to them.

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[145] *CIL* 14.3910.

[146] *CIL* 14.3912.

[147] *Inscr. Ital.* 592.

[148] Male: *C. Acutius C. f. Maturus* (*CIL* 5.2783); *C. [T]itius C. f. C[* (*CIL* 5.2789); *C. Trebius C. f. Firmus* (*CIL* 5.2790); *L. Saufeius C. f. Sca.* (*CIL* 5.3101); *Q. Fabiu[s] / Nicephor[us]* (*CIL* 5.8990); *C. Lollius Gratus* (*CIL* 5.8117.10). Female: *Velleia P. f. Chreste* (*CIL* 5.2792).

[149] cf. *CIL* 5.2840, 2929.

[150] *CIL* 5.7423.

[151] For geographical *cognomina*, see Kajanto, 43-52.

The last group of inscriptions to consider in this grouping comes from the collection of nearly fifty precious objects placed in the sacred spring at Vicarello.[153] Of the fourteen objects which have inscriptions, one has already been commented on,[154] four are inscribed with an itinerary from Gades to Rome,[155] three are too obscure to analyze,[156] and the remaining six can only tentatively be identified. Only one person, *Q. Licinius Nepos,*[157] has all three elements of the name and it may be the case that there is a connection between this Nepos and the better known Cornelius Nepos.[158] The name, *Q. Cassius Ianuarius*[159] almost certainly belonged to a free-born male as a much smaller percentage of occurrences of the name are for slaves or freedmen.[160] The name of *Cl(audius) Severianus*[161] indicates a *gens* that may be derived from the imperial family and may be in fact the name of an imperial freedman. But in the absence of other status markers, it is impossible to determine this with certainty.[162] The last male is a *Q. Murdius.*[163] Once again, it is difficult to interpret this name. The names of the three women are not any clearer than those of the men.[164] It is possible that all three are free-born Romans, although Minucia Zosime has a cognomen which appears Greek in origin and Gavia Rhodine's cognomen may fall into the category of geographic cognomina. In both cases, then, the cognomina may reflect a foreign ancestry.

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[152] *CIL* 2.2993.

[153] A.M. Colini, "La stipe delle acque salutari di Vicarello," *Rendiconti della Pontifica Accademia Romana di Archeologia* 60 (1968): 50-56.

[154] *CIL* 11.3294.

[155] *CIL* 11.3281-3284. See J. Heurgon, "Le date des gobelets de Vicarello," *Revue des Etudes Anciennes* 54 (1952): 39-50.

[156] *CIL* 11.3290-3291, 3294.

[157] *CIL* 11.3289.

Freedmen

The number of freedmen present at spas, other than those in the *familia Caesaris*, was not very high. In fact, only ten appear out of the entire collection of inscriptions pertaining to spas. Three come from Aquae Aponi and Aquae Statiellae and one each from Aquae Caeretanae, Aquae Albulae, and Aquae Pisanae.[165] The ninth is known from Aenaria.[166] Of these individuals little can be said. In the case of A. Iunius Macrinor(um) Nigellus, it would appear that he was manumitted from a situation of shared ownership. The example of the dedication at Aquae Statiellae by the three freedmen to the *genius* of their unnamed patron is also noteworthy. Except for the individual from Aenaria, the remaining names do not display any peculiar aspects and fall into the group of the enormous numbers of freedmen during the Empire.

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[158] Wissowa, "Cornelius, 275" *RE* 7, ser. 1 (Stuttgart, 1900), 1408-1417.

[159] *CIL* 11.3286.

[160] Kajanto, 219. The name *Ianuarius* was the most popular of the calendric *cognomina*.

[161] *CIL* 11.3285.

[162] Kajanto, 34-35.

[163] *CIL* 11.3293.

[164] *CIL* 11.3287, 3288, 3290.

An dedicant on a votive relief from Aenaria has been reconstructed as *[Ful]vius Leitus*.[167] This might be the same as M. Fulvius Leitus M. libertus who is known from another inscription on an altar.[168] This may also be the same person identified as a *libertus* of M. Fulvius Gillus known from *CIL* 9.4776 and consul in A.D. 76. A Leitus is repeatedly referred to by Martial and it is conceivable that his character is the same as the individual in the inscriptions.[169] The inscription identifying the consul was found in the town of Forum Novum in Latium and it seems evident that he chose Aenaria for a spa as it was within moderate travelling distance.

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[165] Aquae Aponi: *A. Iunius Macrinor(um) l. Nigellus* (*CIL* 5.2786); *M. Terentius M. l. Secundus* (*CIL* 5.2788); *L. Octavius L. l. Hilario* (Lazzaro, 161); Aquae Statiellae: *Thallus, Thallio, Agathio l.* (*CIL* 5.7505); Aquae Caeretanae: *L. Gavillius L. l. Aescinus* (Colonna, 442); Aquae Albulae: *[Her]mes Marm(ii) l.* (*Inscr. Ital.* 591); Aquae Pisanae: *iu]s M. l. Eros* (*CIL* 11.1418);

[166] *CIL* 10.6789.

[167] *CIL* 10.6789. Leiva Petersen, "Leitus, 139," *PIR*^{2} 5.1 (Berlin, 1970), 25.

[168] *CIL* 9.4794.

[169] Martial 5.8.12; 14.11; 25.2; 35.5.

Medical Professionals

In her discussion concerning the status of doctors, Treggiari points out that during the Republic and the Early Empire, doctors at Rome were more likely to be enfranchised foreigners or freedmen.[170] It was unlikely that a physician would be a free-born citizen. This is demonstrated by the professions of Asclepiades of Bithynia or M. Artorius Asclepiades probably from Smyrna who was the doctor of Octavian.[171] A slave doctor who was successful could hope to obtain freedom and this is certainly known in several cases, including the famous Antonius Musa and his brother Euphorbus, and less renowned examples such as C. Hostius C. l. Pamphilus.[172] She further notes that as the practice of medicine became more established in Rome, the likelihood of a doctor being free-born increased.

The four doctors known from inscriptions at the spas in Italy, then, can be assessed with this overall development of the profession in mind. The first, from the collection of votive reliefs from Aenaria, names Μενίππος ἰατρὸς ὑπαλπῖνος as the dedicant to the nymphs and Apollo.[173] As Mommsen pointed out, the epithet ὑπαλπῖνος implies that this doctor practiced his art in the Transpadane area, that is in the area beyond the Po river. This would mean that the physician had travelled far to reach Aenaria. Menippos may be identified as a slave as he lacks all indication of status, but he must have been a successful doctor who was able to offer a dedication. The relief has been dated on the basis of its style to the first century A.D.[174] If this is the case, this is evidence that the practice of using enslaved doctors continued into the first century.

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[170] Susan Treggiari, *Roman Freedmen during the Late Republic* (Oxford, 1969), 129-132.

[171] Pliny 26.12-20; Plutarch *Brut.* 41; cf. *CIG* 3285; 2283.

[172] Cassius Dio 53.30; Horace *Ep.* 1.15.3; *CIL* 1.1319.

[173] *IG* 14.892.

Two other names known from Aenaria have been reasonably identified as doctors: *Aur(elius) Mon|nus* and *Num(erius) Fab|us.*[175] Both individuals are lacking clear status indicators. The name Aurelius is the most common in late antiquity among freedmen.[176] The trend of attaching an imperial *nomen* to elevate one's status as a freedman even if the emperor was not involved in the slave's manumission is evident as early as Hadrian. The frequency of this practice would make it quite likely that Aurelius Monnus was a freedman. The same may be true for Numerius Fabus. This is even more probable because the votive relief on which the inscription is carved has been dated to the third century A.D. They have been assumed to be doctors' names since the term *alumnus* is frequently used to indicate a student of medical knowledge, as in the following inscription.[177]

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[174] Forti 1951, 175.

[175] *CIL* 10.6792. Forti 1951, 185-186.

[176] On the use of Aurelius as a status indicator, see Salway, 137-140.

[177] On the use of the word *alumnus*, see H.S. Nielsen, "Alumnus: a term of relation denoting quasi-adoption," *Class. e Medioeval* 38 (1987):141-158. Also, *DE* s.v. alumnus 437-440. cf. *CIL* 12.725.

Another doctor is named in a funerary inscription found in the vicinity of Aquae Caeretanae. A dedication *Dis Manibus / Diodoto / Tauri fil(ius) / medico / Tyanensi ex / Cappadocia* appears at the spa.[178] His tombstone was put up by *Charinus*, identified as an *alumnus*. In this case, Diodotos is certainly of foreign origin but he does not appear to be a slave. The alumnus, Charinus, is probably a student of Diodotos and can be assumed to have also been in the medical profession. The inscription belongs to the third century A.D.

In none of these examples is there a clear suggestion of the role the doctor might have had at a particular spa. It is worth noting, however, that the presence of doctors at spas confirms the idea that spas were considered to be beneficial in essentially rational medicine. The dedications to the appropriate gods which were offered also demonstrate that the role of the doctor and the role of the god could exist together.

Slaves

The evidence for slaves at spas is very thin indeed. Only two inscriptions can be considered to represent slaves and one of these is only tentatively so. In both cases, I have assumed a slave status since only a single name is given and no other status indicators or onomastic clues are evident. The first is found on a votive relief from Aenaria which names *Capellina* as a dedicant *Nymphis*.[179] Forti suggests that the relief reveals stylistic characteristics which belong to the Flavian period.[180] The second, from Aquae Aponi and in very rough letters, names *Adeptus* as making an offering *Apollini*.[181]

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[178] *AE* 1989, no. 307.

[179] *CIL* 10.6793.

General Observations on Gender and Status

In the discussion and interpretation of these inscriptions many points have already been made, including the wide range of social classes which are represented. There are two further issues which warrant comment. The first concerns the distribution of gender among the inscriptions and the second, the evidence for long-distance travels to reach spas.

It is clear that there is an overwhelming male representation in the inscriptions recovered from the spas. Out of the sixty-five individual examples discussed, only eight dedications were made by women. This is not altogether surprising in a social world largely dominated by men.[182] But there is a definite presence of women which cannot go unnoticed. This, together with Martial's comment about Paula's activity at spas and the frequent recommendations of Soranus to use mineral spring water to relieve gynaecological disorders, reveals that women were among the regular visitors to spas.[183]

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[180] Forti 1951, 171.

[181] *CIL* 5.2782.

[182] For example, see some of the fundamental studies on women in antiquity, J.P.V.D. Balsdon, *Roman Women* (New York, 1962); Sarah B. Pomeroy, *Goddesses, Whores, Wives, and Slaves* (New York, 1975); M.B. Fant and M.R. Lefkowitz, *Women's Life in Greece and Rome* (Baltimore, 1982).

[183] Martial 11.7. Soranus 1.56; 3.16; 3.28; 3.32; 3.38; 3.44.

This is not unexpected in that women certainly used ordinary baths and must also have been participants at spa-baths treatments.[184]

Another issue that is brought to light largely from the evidence of the inscriptions is the question of a person travelling to reach a spa. A number of examples which name a particular spa were recovered from locations far from the spa itself. These include one found in Perugia which names Aquae Caeretanae,[185] one from Verona which is dedicated *Apono*,[186] one from Lambaesis for the waters at Aquae Sinuessanae,[187] one from Caesaraugusta, Tarraconensis to the gods at Aquae Statiellae,[188] and one from Dalmatia also dedicated *Aquis Statiellis*.[189] Although in most cases the exact chronology and circumstances of the visit to the spa are not evident, the inscription's location may provide some clue that the dedicant had travelled to a spa.

Other evidence suggests that a journey for treatment of a spa would not be out of the ordinary, perhaps the most revealing of which is the distribution of the glass flasks representing Baiae and Puteoli. Each of the flasks was found in a location which is a significant distance from the two towns and several were recovered from tombs.[190] These vessels were probably used to take away some of the curative water, either for continuing treatment or as a souvenir of the visit. Baiae of course was the best known spa in antiquity and it is to be expected that people came from afar to obtain its healing benefits. But it would appear that a similar pattern of movement can be associated with some of the other spas. For example, an offering found in a healing sanctuary in Northen Italy was dedicated to the waters at Aquae Sulis (Bath) by a Roman officer[191] and it may be that the dedication made by T. Caunius Priscus to the waters of Aquae Sinuessanae known from the inscription from Lambaesis may also have been the fulfilment of an earlier vow.[192]

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[184] Ward 1992.

[185] *AE* 1992, no. 599.

[186] Lazzaro, 203.

[187] *CIL* 8.2583.

[188] *CIL* 2.2993.

[189] *CIL* 3.2833.

[190] Based on the catalogue by K.S. Painter 1975, I have listed those of which the findspot is known: a grave at Piombino (Cat. 1); the catacombs at Rome (Cat. 2);

Although there are examples of voyages having been undertaken to reach a spa, for most people this would have been out of the question and a local spa would have sufficed. This can be demonstrated by several inscriptions from Aquae Aponi which show that the individuals did not come far away, confirming that there was a tendency to use a spa that was nearby rather than travel a very long distance for treatment.

In sum, I would suggest that members of all strata of society were regular users of spas. Although both the inscriptional and literary evidence evokes a picture in which well-known or upper class visitors predominate, it is also possible to see that spas were

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Ampurias, Spain (Cat. 3); possible a burial at the Odemira mine, Portugal (Cat. 4) Ostia, in via dei Vigili (Cat. 6); Tunisia (Cat. 7); Cologne (Cat. 8); Bootham, York (Cat. 9).

[191] Eberhard Sauer, "An inscription from northern Italy, the Roman temple complex in Bath and Minerva as a healing goddess in Gallo-Roman religion," *Oxford Journal of Archaeology* 15, no. 1 (1996): 63-93.

[192] T. Caunius Priscus' dedication may have been offered at Lambaesis because it had a renowned temple to Aesculapius. See M. Janon, "Recherches à Lambése," *Antiquités Africaines* 7 (1973): 193-254.

used by ordinary people including *ingenui*, *liberti*, and even, albeit infrequently, slaves. Some spas, such as Aquae Albulae, seem to have attracted more upper-class visitors, while others, such as Aquae Aponi and Aenaria, catered to a wide range of people. This may be the result of more than one facility having been developed in a single region to accommodate the visitors, in the way that Baiae seems to have operated. It is conceivable that different bath buildings in an area would have been intended to serve different groups of people. Cicero's remarks about joining in with "those who had come for the waters," would suggest that he did not ordinarily mix *cum plurimis et lautissimis* (Cicero *Planc.* 65), because if he did so he would not have commented upon the situation. This would suggest that he normally might have made use of different facilities. But there is also evidence to indicate that at least some spas were specifically frequented by the less prominent members of Roman society. Thus, at Vicarello, virtually none of the dedicants is known elsewhere. This is not to say that they did not have wealth; to judge by the quality of the offerings, some must have had considerable financial resources. Also, at Aquae Caeretanae, there is a significant presence of military personnel as well as a member of the *familia Caesaris*. Given the relative proximity of the spa to Rome, it is conceivable that this particular spa served a particular group of society. With the ongoing development of spas, the full range of social classes may have continued to make use of spas, and Claudian's poem (*Carm. Min* 26.95-100) reveals that, in the early fifth century, the facilities were open to all who required healing and that aid was given free of charge. It is thus clear that the spa establishments were open to a wide range of classes, including both the wealthy and the poor.

Chapter 7

The Economics of Spas

The issue of ownership and finances of spas is central to the institution of spa bathing. Economic factors affected the physical development of a spa and the people associated with it. Current discussion of the economics of ordinary baths is of some assistance when considering spas in particular, for it seems quite probable that spas operated on the same economic principles as ordinary baths.[1] Just as regular baths could be both publicly and privately owned, so presumably could spas. The financial administration of spas seems to have varied as widely as that of ordinary baths which were operated by means of various combinations of imperial contribution, private donation, public expense, and payment by individuals. Thus, on the one hand, some spas seem to have been maintained as low-cost institutions accessible by all levels of Roman society in much the same way as the imperial *thermae*. On the other hand, however, there is strong evidence to suggest that ownership of thermal-mineral healing springs and bathing facilities could be profitable. The profit margin may have been the result of either user-fees or of larger-scale business schemes involving leasing of property or even selling of institutions. This chapter discusses some of the economic aspects of a spa, including imperial benefaction, public contributions and financial benefits, private ownership, and individual expenses and fees.

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[1] Nielsen 1990, 119-135; Yegül 1992, 43-47; H. Meusel, *Die Verwaltung und Finanzierung der öffentlichen Bäder zur römischen Kaiserzeit* (Köln, 1960); Merten 1983, 3-58. That spas and baths operated similarly, see Houston, 364-366.

Imperial Contributions to Spas

It is clear that the imperial family had a major role in the activity at several spas. The presence of the emperors had a significant impact at Baiae, Aquae Tauri, Aquae Cutiliae, Aquae Sinuessanae, and Aquae Aponi.[2] Not only did the emperor bring prestige to a locale, he also may have contributed financially to a spa, especially for building projects.[3] In most cases, when an emperor paid for building at a spa, he himself must have had an interest in using its facilities.[4]

The evidence for the role of an emperor in building activity at spas, however, is fairly thin. Suetonius' account of Nero's building of the *piscina* for all the thermal-mineral waters at Baiae makes it clear that the emperor had a direct financial role in the project; this is one of several examples given which shows how Nero squandered not only his own fortunes, but those of the empire.[5]

At Aquae Tauri, a brick-stamp with *Port(us) Trai(ani)* indicates that the building of Trajan's port occurred at the same time as the construction of the baths.[6] In many circumstances, the presence of an emperor's name on a brick would have no economic implications beyond the imperial ownership of brick-yards.[7] However, because it is known that Trajan was personally responsible for the harbour, the use of material from it strongly suggests that he was also involved in the development of the bath-building.[8]

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[2] See Chapter 6 on the imperial presence at spas.

[3] On euergetism, see Paul Veyne, *Bread and Circuses* (London, 1990), 361-366. For some general comments on the building activity of the emperors, see Kathryn Lomas, *Roman Italy* (London, 1996), 111-119. On Hadrian's interest in building in Italy, see Boatwright 1989. On imperial *beneficia*, see R. Saller, *Personal Patronage under the Early Empire* (Cambridge, 1982), 41-78.

[4] See Nielsen 1990, 119-120 for the question of imperial funding of bath-construction. Also, Veyne 1990, 361-366.

[5] Suetonius *Nero* 30-31.

[6] Mengarelli 1919, 212.

Three lead pipes from Aquae Aponi bearing the name Arria Fadilla, the mother of Antoninus Pius, support the possibility that she may have been involved in the development of the spa.[9]

The site of Aquae Vescinae also benefitted from imperial finances. Several inscriptions on limestone plaques record that the Severans financed the construction of a road from the coastal city of Minturnae to Aquae Vescinae between A.D. 200 and 209.[10] It connected to the Via Appia which ran along the coast and presumably provided easier access to the spa located in the valley of the Garigliano River.[11] The spa must have been frequented by some of the *familia Caesaris*, for two *servi dispensatores* made an offering to the *genius* of the waters in the early third century.[12]

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[7] See T. Helen, *Organization of Roman Brick Production in the First and Second Centuries A.D.* (Helsinki, 1975).

[8] Pliny *Ep.* 6.31.

[9] *CIL* 5.8117; Lazzaro 1981, 214-216; R. Bloch, *I bolli laterizi e la storia edilizia romana* (Rome, 1947), 20.

[10] *AE* 1914, 217; *AE* 1982, 153; *AE* 1989, 144-145; Arthur 1991, 105, no. 2.

[11] See Arthur 1991, 51-52.

[12] Giglioli 1911, 39-40.

A letter of Cassiodorus clearly indicates the economic role a ruler played in the finances of Aquae Aponi in late antiquity.[13] Theoderic, writing to his architect, expresses his interest in restoring the baths at Aponus to their former glory in order to manifest his own regal powers. Theoderic wants his architect to determine the cost of the endeavour and was not unwilling to pay whatever was necessary in order to create a good image.[14]

Civic Involvment

A municipality could pay for the operation of a spa in much the same way as the citizens of a town might be expected to finance its own baths.[15] As already indicated, Hispellum was responsible for providing baths and accommodations at the source of the Clitumnus. These facilities were paid for out of public funds and were available to the public at no cost to individuals. We have no indication of the amount of money that would have been required to operate the facilities. However, as the temple dedicated to the god Clitumnus was littered with oracular responses, and a number of smaller shrines were present, it seems that the location was frequented by a steady stream of visitors.[16] The expense required to operate appropriate lodgings and a bath which may have functioned, at least in part, as a spa, was undoubtedly considerable.[17] The town probably did not make a profit from its efforts, but was under obligation to maintain the baths and lodgings, presumably under the terms of the arrangement by which Augustus had transferred the land.

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[13] Cassiodorus *Var.* 9.6. See Appendix 4.

[14] In the same vein, King Thrasamundus was praised by the poet Felix for having constructed spa facilities in North Africa which were open to the public: *Hoc uno rex fecit opus Thrasamundus in anno, / inclita dans populis munera temporibus. / hic senibus florens virtus renovatur anhelis, hic fessos artus viva lavacra fovent.* (Felix *Anth. Lat.*, 202) (King Thrasamundus accomplished this work in one year, giving glorious gifts to the people in the times. Here flourishing strength is renewed in old gasping men, fresh baths wash tired limbs.)

For a thorough examination of the development of spas and baths as acts of euergetism in North Africa, see M. Chalon et al. "Memorabile Factum," in *Antiquités Africaines* 21 (1985): 207-262.

Theoderic's interest in building and restoration occurs following a period of decline in Italy and reflects an increase of wealth at the end of the fifth century. See, John Moorhead, *Theoderic in Italy* (Oxford, 1991), 135-138.

[15] See Nielsen 1990, 120.

At Teanum Sidicinum, an inscription records the price paid for a bath-building, the *Balneum Clodianum*, together with its buildings.[18] The excavator suggested that it referred to the spa baths located just outside of the city.[19] The city paid the sum of 60,000 sesterces, collected by the payment of the *pecunia Augustalium* of six citizens for the baths. This amount is apparently among the lowest paid for a bath in Italy so it is possible that the baths were either in poor condition or quite small.[20]

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[16] Pliny *Ep.* 8.8.

[17] For a discussion on the range of the costs of operating a bath, see Nielsen 1990, 122-125.

[18] *CIL* 10.4792=*ILS* 5677: *s.c. balneum Clodianum / emptum cum suis aedificis / ex pecunia Augustal(ium) (sestertium nummum milibus sexaginta) / Q. Minuci Ikari / C. Augilli Suavis / C. Aiscidi Lepotis / N. Herenni Optati / M. Caedi Chilonis / M. Ovini Fausti.*

[19] E. Gàbrici, "Teano - avanzi di un grande edifizio termale dell'antico 'Teanum Sidicinum', scoperti in contrada Santa Croce," *NSc* 16 (1908): 414.

[20] See Richard Duncan-Jones, *The Economy of the Roman Empire* (Cambridge, 1974) 124.

Visitors brought economic benefits to communities where spas were situated and their absence would have had a financial impact. In a period of relative unpopularity following Augustus' cold water cure by Antonius Musa, the *vicus* at Baiae is said to lament the lack of visitors to its facilities.[21] We may infer that there was a decline in both social and economic activity. The many visitors, most of whom would have had a certain amount of wealth, must have contributed financially to the overall prosperity of Baiae. The resort as a whole must have been interested in the operations of its thermal-mineral water facilities because it stood to profit from their visitors.

On the island of Lipari the entire town profited from its thermal-mineral baths.[22] Diodorus Siculus says that because the baths had hot water that was good for curing illness, the city became wealthy and well-known. He relates that the baths were known for providing pleasures and entertainments.[23] People with many different diseases travelled from Sicily to use them. The wealth gained from the attraction of the spa was spread among its inhabitants.

Attention should also be given to several recently discovered inscriptions at Hammat Gader in Israel which identify the governor Alexander (and a private citizen named Leon) as contributors to building activity at the spa in the early 6th century. See L. Di Segni and Y. Hirschfeld, "Four Greek Inscriptions from Hammat Gader from the Reign of Anastasius," *IEJ* 36 (1986): 251-268.

[21] Horace *Ep.* 1.15.5-7. For a recent discussion of the role of the *vicus*, see C.R. Whittaker, "The consumer city revisited: the *vicus* and the city," *JRA* 3 (1990): 110-117.

[22] Diodorus Siculus 5.10. On the economic and social organization of the island of Lipari, see T. Figueira, "The Lipari Islanders and their System of Communal Property," *Classical Antiquity* 3, no.2 (1984): 179-206.

[23] The dual-nature of a spa, i.e. providing cure and pleasure, is a common theme seen most readily at Baiae.

A similar account of prosperity of a spa is found in Strabo's comments about Aquae Caeretanae. Strabo, writing at the end of the first century B.C., says the spa had a larger population than the original town of Caere. He attributes this development to the visitors who came to the springs for their cures.[24]

In general, as the evidence shows, it should be inferred that the clients brought considerable wealth and spending power to spas which contributed to the overall wealth of a community.

Private Ownership of Springs and and Spas

Ownership of Springs at Baiae

There is also evidence for the involvement of individuals in the ownership and operation of spas. Three passages from legal texts make it clear that a private individual could own a thermal-mineral spring, and several different individuals are known from the literary sources to have possessed springs which may have functioned as spas.[25] The clearest indication of private ownership of springs comes from Baiae. Much of the information presented here is well-known in the context of ownership of property in the Baian area, but it has not been generally considered in connection with baths used for healing purposes.[26] It would appear that one of the reasons for building villas there was to make use of the thermal-mineral springs.

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[24] Strabo 5.2.3.

[25] *Institutiones* of Gaius 3.34 and *Digesta* of Justinian 43.22; 43.20.13 (although the water in this case is used for irrigation.)

During the Sullan proscriptions and confiscations of 81 B.C., the properties of many individuals were claimed for the purpose of redistribution to loyal retired legionaries. Plutarch comments specifically on the loss of villas, gardens and τὰ ὕδατα θερμὰ at this time.[27] Some of the most desirable properties which changed hands, including the estates of Marius, were located along the Campanian coast where there were numerous thermal-mineral springs. It can be surmised that hot springs were a valuable possession at these villas.[28]

Sometime before 61 B.C., and probably during the Sullan confiscations, C. Scribonius Curio acquired a villa which had previously belonged to Marius.[29] One of the reasons for the purchase of the property seems to have been its springs. Cicero had previously noted that Curio desired the waters of an Arpinum man, i.e. Marius.[30] D'Arms suggests that this account refers to a villa owned by Marius in the Baian area. That Marius was not of robust health is certain and he seems to have maintained several residences near Baiae which would allow him to partake of therapeutic treatments.[31] The villa, following Curio's death, remained in the possession of his son.

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[26] D'Arms 1970 in particular identifies the many different owners of property along the Campanian coast, but he focuses on questions of villas and development, rather that the use of spas.

[27] Plutarch *Sulla* 31.

[28] For an assessment of the situation along the Campanian coast, see D'Arms 1970, 30. Other areas were also affected by Sulla's actions, including Northern Italy and Etruria, both of which also had a considerable amount of thermal-mineral activity.

[29] On the transactions and ownership of the villa in question, see D'Arms 1970, 26-29. The ownership of the villa, complete with its springs, is confirmed by a passage from Cicero: *nec enim respexit illum ipsum patronum libidinis suae non modo apud Baias esse, verum eas ipsas aquas habere, quae <e> gustu tamen Arpinatis fuissent.* (*Clod.* frag. 20).

[30] *"narra" inquam "patrono tuo, qui Arpinatis aquas concupivit."* Cicero *Att.* 1.16.

Other private individuals owned thermal-mineral springs around Baiae. Pliny relates that Posides, a freedman of Claudius, gave his name to springs which were hot enough to cook fish.[32] Presumably, since Posides owned other property, these springs were not only named after the freedman but belonged to him.[33] That they are described as being able to cook *obsonia* describes the extremely elevated temperature of the springs rather than their function. Licinius Crassus owned hot springs with healthful properties that flowed into the sea.[34] Antistius Vetus was the subsequent owner of one of Cicero's villas, the *Cumanum*, located on the coast between Lake Avernus and Puteoli.[35] Shortly after Cicero's death, springs appeared on the property which relieved problems of the eyes. The poet Tullius Laurea, a freedman of Cicero, wrote about the powers of the springs which, because the property was originally owned by someone who was read throughout the world, was able, by association, to restore failing sight. It is worth noting that the new owner, Vetus, took great care to maintain the villa.[36]

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[31] Cicero *QFr.* 2.10. See Chapter 6.

[32] Pliny *HN* 31.2.

[33] See D'Arms 1970, 93.

[34] Pliny *HN* 31.5. For a discussion of the identity of this Licinius Crassus as contrasted with L. Licinius Crassus (cos. 95), see D'Arms 1970, 22.

[35] Pliny *HN* 31.3. On C. Antistius Vetus, see D'Arms 1970, 172.

In none of the examples of the private ownership of thermal-mineral springs at Baiae is there explicit reference to facilities for spa bathing. Yet, it can be assumed, especially at the villas, that baths on their premises would have used any springs if they were available.

The Evidence from the Poems of Florus in the *Anthologia Latina*

The poems of Florus, the second century poet and historian, provide an unusual and important view of the construction and ownership of spas.[37] Several of his poems provide descriptions of baths that seem to be associated with thermal-mineral springs and therefore, should be considered spas.

In one poem, Florus describes a bath flowing with sweet water (*dulciflua aqua*) and contrasts to the baths found on the Cumaean shores.[38] A verse of the poem says that

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[36] Pliny *HN* 31.3: *nunc reparat cultu sub potiore.*

[37] For discussion on the identity of Florus, B. Baldwin, *Later Latin Literature* (Amsterdam, 1987), 8-19; B. Baldwin, "Four problems with Florus," *Latomus* 47 (1988): 134-142.

[38] (n.b. I have included the entire text and translation of Florus' spa poems because: 1) they are not very well-known and 2) the witticisms and subtleties of meaning are best evidenced in the Latin.)

> *Fausta novum domini condens Fortuna lavacrum*
> *Invitat fessos huc properare viae.*
> *Laude operis fundi capiet sua gaudia praesul*
> *Ospes dulciflua dum recreatur aqua.*
> *Condentis monstra<n>t versus primordia nomen*
> *Auctoremque facit littera prima legi.*
> *Lustrent pontivagi Cumani litoris antra;*

the first letter of each line of the poem spells out the name of the *condens* which is Filocalus.[39] Another verse says that the *auctor* is found in the first word of the poem. His name is Faustus. Faustus seems to have supplied the necessary land and to have employed Filocalus to undertake the building project on his behalf.[40] While it is not clear whether the bath was open to the public or only to invited guests, it is certain that this facility was financed, at least in part, in private.

Another pair of poems reveals the nature of proprietorship of a spa of a wealthy man (*dominus*) named Vita. He is praised for providing a bath or spas (*nova balnea* and *succinctae baiae*) in the countryside.[41] Florus says that Vita has cleverly created a

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Indigenae placeant plus mihi deliciae. (*Anth. Lat.* 109)

Auspicious Fortune building a new bath of the lord invites people weary of the road to hasten here. The owner of the land will receive his joys from the praise of his work, while the guest is refreshed by sweet-flowing water. The beginnings of the line show the name of the builder and the first word makes the owner to be read. Sea-faring travellers may tour the caves of the Cumaean shore; Let local delights please me more.

[39] *Philocalus* is a well-attested name during the Empire. See, H. Solin, *Die grieschischen Personennamen in Rom* 2 (Berlin, 1982), 751-752.

A similar acrostic is found in Felix's poem about the Baths of Alianas, founded by Thrasamundus. (*Anth. Lat.* 214)

[40] It is also possible that the owner and the builder were the same person, i.e. Faustus Filocalus.

[41] *Vita opibus tenuis, sed parvo in caespite sollers,*
fundavit gemino munere delicias.
nam nova in angusto erexit balnea campo,
edulibusque virens fetibus hortus olet.
quae natura negat, confert industria parvis:
vix sunt divitibus quae bona pauper habet. (*Lat. Anth.* 168)

Vita is limited in wealth, but resourceful in exploiting his tiny lot, he has established charms with a two-fold gift. For he has erected a new bath on his narrow field, and a flourishing garden is fragrant from edible produce growing there. What nature denies, industriousness provides for humble men: Rich men scarecely own the good things that a poor man has.

complex which supplies the pleasures of a bathhouse and the fruits of a garden. As there is no direct indication of springs supplying the bath-house, the interpretation of this building as a spa rests on other features of the poems. The final words of the two poems, *sumitur inde salus*, together with the use of the term *bais* to describe the facility are significant in that they mark the baths as a spa.[42] The position of the word as the last word in the poem puts an emphasis on the healthful quality of the baths. This spa is slightly different from others already considered in that it seems to be used primarily by Vita himself.

In a fourth poem, Florus celebrates Bellator for his construction of a sea-side bath-house.[43] This bath seems to have been particularly attractive as it is described as

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Parvula succinctis ornavit iugera bais
urbanos callens fundere Vita †locus†.
hic quoque pomiferum coniunxit sedulus hortum,
qui vario auctorem gramine dives alat.
rus gratum domino duplici iam munere constat:
hinc capitur victus, sumitur inde salus. (*Lat. Anth.* 169)

Vita, knowing how to establish an elegant ambience, has adorned his tiny little estate with a compact spa. Here also the busy man added a fruit-bearing garden, which being rich feeds the owner with various crops. The land is gratifying to the lord because of its two-fold gift: on the one hand, nourishment is obtained, on the other, health.

[42] For the use of *baiae* as synonomous with a healing spa, cf. Sidonius Apollinaris 5.14, where the word "*baiae*" does not refer to the Campanian centre, but probably to Aquae Calidae (i.e. Vichy). Also, on a mosaic where the use of the cognomen Baiae describes the owners of an idyllic coastal villa setting, complete with bath buildings. cf. Katherine Dunbabin, *The Mosaics of Roman North Africa* (London, 1974), 129; Mohamed Yacoub, *Le musée du Bardo* (Tunis, 1993), 232.

[43] The name *Bellator* is probably the Latinized form of the Celtic *Bellatorix*. Occurrences of the name are most often found in Gaul, which suggests that this poem is about a spa actually located in that region. However, I have included it in the discussion of the private ownership of spas because it is a particularly clear example of this aspect of spas. For the name Bellator, see Kajanto 1965, 16-17, 361.

Hic ubi baiarum surrexit blanda voluptas *splendens* and *pulchra*. The building is located in an otherwise little developed area; it is not part of a town or community. That these baths should be considered a spa is certain. The phrase *baiarum blanda voluptas*, once again uses *baia* in the generic sense of the term and refers to the function of the building. The spa has brought benefit and prosperity to the area, although the land, before the building of the spa, had resulted in little profit for the owner (*dominus*). As a tenant of the property (*locans*), Bellator succeeded in establishing a successful enterprise and seems to have paid for constructing the facilities. Just as with other spas, it is difficult to determine whether this bath-house was for public or private use. However, as the poet has chosen to refer to the spring itself with a first-person plural possessive adjective (*nostri fontis*), it is more likely that this spa was developed for public use.

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et rudibus splendens molibus extat opus,
rura prius, nullum domino praestantia quaestum
nullaque tecta tulit glebula frugis inops.
haec nunc Bellator multo sublimis honore
vestivit cameris balnea pulchra locans.
prospera fa<c>ta viri naturae munera mutant,
cum salsum salubri litus abundat aqua.
Alpheum fama est dulcem per Tethyos arva
currere nec laedi gurgitibus pelagi.
dant simile exemplum nostri miracula fontis:
vicinum patitur nec sapit unda salum. (Anth. Lat. 99*)*

Here where the sweet pleasure of the spa has arisen and a shining building stands forth on rough foundations; where before there were rural lands, providing no profit for the owner, and the little land destitute of value supported no dwellings. Now Bellator, distinguished by much honour, leasing these lands has adorned the beautiful baths with vaults. The successful deeds of the man change the gifts of nature, when the salty shore abounds with healthful water. There is a tradition that the sweet Alpheus runs through the lands of Tethys and that it is not damaged by the swirling eddies of the sea. The wonders of our spring give a similar example: the water meets the neighbouring sea and does not taste of it.

Expenses of Operation and Construction

In general, the operation of baths which made use of thermal-mineral springs may have been costly. Although spas did not incur the expense of heating water, the technology required to obtain access to the spring water could be expensive. The engineering works undertaken to cut into the volcanic rock of the Phlegraean Fields at Baiae in order to reach the hot waters and vapours were considerable, and presumably, costly.[44] Dio Cassius comments on the high cost of the apparatus (κατασκευαὶ πολυτελεῖς) necessary to make both steam and water accessible for use.[45] His remarks follow a description of Agrippa's creation of the *Portus Iulius* in 37 B.C. by cutting channels from the Bay of Naples to Lake Avernus.[46] Given that this in itself must have been a major engineering feat with considerable cost in labour and money, it is revealing that Dio found the equipment at Baiae worthy of mention as well.

Expenses to Visitors

Having adequate financial resources would have been an important feature of life at Baiae; to be without money was cause for concern. That a visit to the resort area could be expensive, at least in the first century A.D., is clear from the fact that a *sportula* of one hundred quadrantes was considered to be insufficient.[47] In addition to the actual costs of spa therapy, other expenses may have been incurred. One of the initial expenses which could have been considerable was the cost of journeying to reach a spa. It is probable that the majority of visitors used spas which were within easy reach, but there is also evidence which suggests that travelling to a particular place was advisable. Caelius Aurelianus frequently encourages a long journey, often to a seaside resort, in conjunction with a visit to a spa as a way of recuperating and restoring a patient's health.[48] For some visitors to the spas, rented accommodations had to be acquired.[49]

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[44] See Yegül 1996, 141-142; Paget 1967, 102-112.

[45] Dio Cassius 48.51. Similar achievements in exploiting the thermal-mineral waters are also evidenced at the nearby baths of Agnano, and at San Calogero and Aquae Aponi. See Chapter 3, on transporting the hot water through pipes or channels over an extended distance.

[46] Dio Cassius 48.50. Also, on the *Portus Iulius*, Strabo 5.4.5; See R. Paget, "The Ancient Ports of Cumae," *JRS* 58 (1968): 152-168.

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[47] Martial 1.59. In Martial's time, the normal rate for *salutiones* paid by a patron to his client was one hundred quadrantes. On the amount of *sportulae*, see Richard P. Saller, *Personal Patronage under the Early Empire* (Cambridge, 1982), 128-129; Duncan-Jones 1974, 138-144. For a discussion of the *sportula* in Juvenal and a comparison and discussion of its presence in Martial, see Duncan Cloud, "The client-patron relationship: emblem and reality in Juvenal's first book," in Andrew Wallace-Hadrill (ed.), *Patronage in Ancient Society* (London, 1989), 209-215.

[48] Caelius Aurelianus *Chron.* 1.1.42; 2.7.109; 3.1.10; 3.5.74; 3.6.89; 3.7.93-94; 4.3.76; 4.7.104. Also, e.g., an inscription found at the Temple of Aesculapius in Lambaesis which mentions Aquae Sinuessanae suggests the dedicant had travelled to the Italian spa. (*CIL* 8.2583)

[49] For rental of lodgings, Martial 11.82. Suites of rooms which would have housed visitors also sometimes formed part of the entire complex. This would have been necessary especially at resorts which were not located in close proximity to a town or city. Rooms of this kind have been tentatively identified at Aquae Tauri, Aquae Vescinae, and the hillside complex at Baiae. The healing spa at Djebel Oust in Tunisia displays a fully integrated complex of bathing facilities and lodging, complete with a luxurious dining room. Although there is no direct evidence concerning the cost of using these suites, it is hard to imagine that such facilities did not require sufficient payment. On Aquae Tauri: Heinz 1983; Aquae Vescinae: Fulvio 1887; Baiae: Yegül 1996; Djebel Oust: M. Fendri, "Djebel Oust," *EAA* (Rome, 1970), 283-286.

Furthermore, although there is little in the evidence to confirm it, there must have been doctors or attendants in the establishments who could treat clients at the spas.[50] As not everyone would have required the same treatments or procedures, it seems hardly feasible to suggest that a single fee was charged to all clients which would cover all services provided.

In two cases it is stated clearly that the services were provided without cost to the visitor. As we have seen, at the source of Clitumnus, Pliny says that the baths and accommodation are provided to visitors free of charge by the town of Hispellum.[51] In the early fifth century, Claudian says that at the springs of Aponus (or Aquae Patavinae) the facilities are open to all who require healing and that aid is given free of charge.[52] We may infer from the fact that Pliny and Claudian considered it necessary to comment on the absence of fees that in most circumstances, there were charges to the clients.

Despite these hints at the costs of using a spa, there is no evidence for what the fees may have been. This is somewhat surprising as there is at least some evidence for the price of admission to regular bathing facilities.[53] The costs involved must have varied according to the location of the spa, the facilities available, and the treatment required. Some spas must have benefitted from high levels of private patronage, just as is known with ordinary baths, resulting in virtually no expense for the visitors. Without such sponsorship, it is difficult to explain the wide class of users which are known to have frequented the spas.

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[50] For doctors known from inscriptions at spas, see Chapter 6. Also, for the presence of doctors or surgeons in baths, see E. Künzl, "Operationsräume in römischen Thermen," *Bonner Jahrbücher* 186 (1986): 491-509.

Information concerning the staffing of a spa is sadly lacking in the literary record. It is likely that the non-medical staffing needs of a spa were similar to those of an ordinary bath. For an overview of the management and staff found at baths, see Nielsen 1990, 125-131.

[51] Pliny *Ep.* 8.8.

[52] Claudian *Carm. Min.* 26.

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[53] Martial 3.30; 8.42; Juvenal 6.445-7; Horace *Sat.* 1.3.137; Seneca *Ep.* 86.9; Juvenal 2.152. For inscriptions related to the heating and running of public baths, see Duncan-Jones 1974, 236, 215. Also, Nielsen 1990, 131-134.

Chapter 8

Religious Activity at Spas

One of the significant factors contributing to the Roman use of spas was a deeply embedded religious conviction about divinities associated with healing and springs.[1] But worship and belief in the intervention of the gods was not a primary focus of a visit to a spa; healing rituals were normally held at sanctuaries specifically dedicated to healing divinities.[2] The main purpose for seeking a spa was to use the appropriate waters necessary for a cure - not to worship a healing god. Yet it cannot be overlooked that certain aspects of activity at the healing spas did have a religious content and that healing for the Romans, in origin, belonged to the realm of the divine.

Recent discussion about religion in ordinary baths has relevance to its presence in spas because, at a fundamental level, they had an association with the divine world.[3] This chapter presents evidence which clarifies the nature of cult and religion at spas, although this information is fragmentary and often inconclusive. In the physical record, evidence for cult activity is best evidenced by votive offerings and the presence of sculptures of the gods. The written evidence, including texts and inscriptions, provides further information about the existence of religion in spas.

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[1] See Jackson 1990, 138-169. For a discussion of the Greek cult origins, see J.H. Croon, "Hot Springs and Healing Gods," *Mnemosyne*, s. 4, 20 (1967): 225-246. For Etruria, see P. Aebischer, "Notes et suggestions concernant l'étude des eaux en Etrurie," *SE* 6 (1932): 123-144.

[2] The best known are the many sanctuaries dedicated to Aesculapius. For a listing of the main ones, cf. A. Walton, *Asklepios, The Cult of the Greek God of Medicine* (Chicago, reprint 1979), 119-120. Also, see R. Ginouvès, "L'eau dans les sanctuaires médicaux," in Ginouvès 1994, 237-246.

[3] See Yegül 1990, 124-127; Katherine Dunbabin, "Baiarum grata voluptas: pleasures and dangers of the baths," *PBSR* 44 (1989): 7-46; Pierre Aupert, "Les thermes comme lieux de culte," in Lenoir 1991, 185-192; John Scheid, "Sanctuaires et thermes sous l'Empire," in Lenoir 1991, 205-214.

Gifts to the Gods

Pre-Roman Votive Offerings

Although votive offerings are one of the clearest indicators of ritual activity in spas, deposits of votive objects are not usually found within the confines of the spas themselves.[4] Instead, they may be located in or near a thermal-mineral spring which supplied the requisite water.[5] In order to propitiate the gods most effectively, the gifts were placed directly in contact with the divinity, who sometimes took the form of the spring or water.

In several cases, deposits of votive offerings have been discovered which demonstrate a pre-Roman cult use at a site with a thermal-mineral spring. Three deposits found near Montegrotto Terme (Aquae Aponi) point to the early practice of votive offerings made in the context of healing springs.[6] Nearly four thousand clay vases, mostly utilitarian in form, together with a few bronze and gold vessels which were found in the area where the spring waters are known to have collected, attest to religious activity. Several bronze figurines, including a group of small horses, were also discovered. The votive offerings belong to a period pre-dating the Roman development of the bathing complex, but their presence suggests that the later developments originated in cult activity.

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[4] Some of the main works on votive offerings: W.H.D. Rouse, *Greek votive offerings* (Cambridge, 1902); L. Vagnetti, *Il deposito votivo de Campetti a Veio* (Rome, 1971); G. Gualandi, "Santuari e stipi votive dell'Etruria padana," *SE* 42 (1974): 37-68; M. Fenelli, "I votivi anatomici di Lavinio," *Archeologia Classica* 27 (1975): 232-252; Maria Bonghi Jovino, *Depositi votivi d'Etruria* (Milan, 1976); P. Pensabene et al. *Terrecotte Votive del Tevere. Studi Miscellanei 25* (Rome, 1980); C. Bourgeois, *Divona I. Divinités et ex-voto du culte Gallo-Romain de l'eau* (Paris, 1991). Also, see B. Ginge, "Votive deposits in Italy: new perspectives on old finds," *JRA* 6 (1993): 285-288.

[5] For a discussion of the location of votive deposits in relation to baths in Gaul, see Aupert 1991, 185-186.

Comparable patterns of religious activity at a spring leading to the development of a healing spa can be seen at other sites in Italy. At Aquae Sinuessanae, around five thousand statuettes are said to have been looted during the construction of a modern hotel located just to the north-east of the remains of a Roman Imperial structure.[7] Although the date of the assemblage is not entirely certain, at least some of the ex-votos are believed to be pre-Roman.

At Vicarello, the collection of votive offerings, including many vases and coins, found in the basin around the spring, attests to cult activity in the area over a long period.[8] While most of the objects belong to the Roman period of development of the baths, some indicate that the cult began earlier.

Anatomical Votives

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[6] Lazzaro, 31-44; Migliolaro, 35.

[7] Arthur 1991, 111.

[8] E. Künzl and S. Künzl, "Aquae Apollinares/Vicarello (Italien)," in Chevallier 1992, 273-296; Colini 1968.

Deposits of anatomical votive offerings are well-known from antiquity and are commonly found in healing sanctuaries from both the Etruscan and Roman periods.[9] Terracotta models of the afflicted part of the body were presented to an appropriate god, either in supplication or in gratitude for divine intervention. By the end of the Republic, the practice of dedicating anatomical terracotta votives had all but died out in Italy. The thousands of anatomical votive objects from Ponte di Nona belong to the Republican period; traces of structures which belong to a later phase of the site occur without signs of anatomical votives.[10] The small bronze feet and arm which were collected in the area of Aquae Aponi also provide evidence for the practice of making anatomical votive offerings at a healing spring which later became a spa.[11] However, as the objects do not have a precise context, it is only possible to suggest that they belong to the same period of activity as is represented by the other pre-Imperial votive offerings.[12]

The shift away from these kinds of votive offerings represents an underlying change in both religious and medical beliefs. As more rational explanations were offered to interpret events in the world, less credence seems to have been given to certain superstitious actions. Philosophies seeking definitive answers from the surrounding world were increasingly embraced and gave rise to renewed interest in Epicureanism, most emphatically demonstrated in literature by Lucretius' attempt to explain phenomena of all types in physical terms. By the end of the Republic, a transition had occurred in religious and philosophical beliefs whereby philosophies of the Greek world such as Epicureanism and Stoicism had been embraced and adapted to Roman needs.

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[9] P. Decouflé, *La notion d'ex-voto anatomique chez les Étrusco-Romains* (Bruxelles, 1964); M. Tabanelli, *Gli ex-voto poliviscerali Etruschi e Romani* (Florence, 1962); M. Vauthey and P. Vauthey, "Les ex-voto anatomiques de la Gaule Romaine," in Pelletier 1985, 111-117.

[10] Potter 1985, 23-47.

[11] *Delle antiche terme di Montegrotto*, 54-55, 72-73.

[12] Lazzaro, 105-106.

Yet, belief in magic and superstition continued and even found renewed popularity, albeit without official sanction, under the Empire.[13] Although the main component of healing at spas was based on "rational" methods of hydrotherapy, there was nevertheless a quasi-rational element as well in the form of underlying religious belief. Doctors did not generally dismiss the usefulness of treatment by the gods and rational medicine was able to exist side-by-side with belief in divine healing. There is evidence to support the notion that doctors advocated temple medicine as an alternative to rational procedures.[14] Hippocrates himself is said to have based his medical studies on case histories recorded on the walls of the Temple of Asclepius at Cos.[15] It was also the case that seeking divine aid was viewed as necessary when other treatments failed to produce results. Another factor involved in asking a god for help in healing was economic. Wealthy people may have been able to afford doctor's fees or even to retain a slave with medical expertise. This luxury would not have been available to those with lower incomes, and temple medicine would have served the needs of the economically disadvantaged. The earlier practice of offering anatomical votives corresponds to this model as most of the objects were simple, probably inexpensive, moulded clay items, created by craftsmen for use by visitors to the shrines.[16]

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[13] J.H.W.G. Liebeschuetz, *Continuity and Change in Roman Religion* (Oxford, 1979), 119-139; For a discussion of Pliny's role in the continuation of superstitious thought, see G.E.R. Lloyd, *Science, Folklore and Ideology* (Cambridge, 1983), 140.

[14] Pensabene 1980, 28; L. Edelstein, "Greek Medicine in its Relation to Religion and Magic," in Temkin and Temkin 1967, 245.

[15] See Pliny *HN* 29.4.

Despite this medical duality, it cannot be denied that certain tendencies towards religious activity shifted away from the earlier beliefs in cure by magic as represented by the anatomical votive offerings. It seems that as doctors earned the reputation of being skilled in treating specific disorders, there existed less need to ask the gods to intervene by means of anatomical votives. However, it is important to note that the practice continued elsewhere, notably in Gaul and Britain, where archaeological remains of anatomical offerings in spa contexts suggest that change extended slowly throughout the Roman Empire.[17]

Roman Votives

A series of votive reliefs found on the island of Aenaria (Ischia) is evidence of cult activity at thermal-mineral springs which were specifically recognized as having healing properties (fig. 28-32). They date from the first century B.C. through to the fourth century A.D. The similar style of many of the reliefs suggests that they are products of a local workshop. The inscriptions specifically refer to the nymphs and Apollo. Forti's suggestion that the reliefs may have been attached to a grotto or space housing the source of the springs can be accepted only tentatively insofar as a bathing complex which would have served as a developed spa has not yet come to light.

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[16] Pensabene 1980, 30.

[17] Gaul: Susan Deyts, "Sources sacrées, stations thermales et ex-voto de guérison en Gaule romaine," in Chevallier 1992, 55-61; I. Fauduet, "Sanctuaires associés à l'eau en Gaule centrale," in Chevallier 1992, 199-206. Britain: M. Henig "The Small Objects," in Cunliffe 1985 vol. 2, 5-36. At Bath, only one each of ivory and bronze breasts was found as representations of anatomical votive offerings. Henig comments: "Compared with other shrines associated with water, the absence of ex-votos, representing parts of the human body requiring cure, is striking."

Various images of mortals, nymphs and Apollo are depicted, engaged in acts which seem to be connected to the use of the renowned thermal-mineral springs on the island. A hydria, a vessel commonly used to carry water, figures prominently in some of the reliefs, sometimes with water flowing out (fig. 28-30). This is an appropriate attribute for nymphs of springs, as the vessels represent the water from the springs. Another typical symbol of water is the figure of a river-god, seen reclining below the main scene of the relief (fig. 29b). In one relief, a nude figure, perhaps a nymph, washes her head in a basin which is filled with water poured from a hydria; this may be an indication of how thermal-mineral waters were used (fig. 31). One relief seems especially to focus on the healing qualities of the thermal-mineral waters: a female figure draws water with her hands from a basin to her mouth in order to ingest it (fig. 32). The water may have been poured by another figure who holds a hydria. That this is a scene of healing is made clear by the presence of Apollo in his role as a healing god, who stands to the left, holding a lyre.

Another important collection of votive offerings is the material found in the spring and adjoining basin area at Vicarello.[18] Republican coins were recovered from a thermal-mineral spring which fed the baths of the spa. Few terracottas of any type were found, although at least some anatomical votive offerings might have been expected. A large number of metallic vases was recovered from the spring as well.[19] The collection includes four silver goblets, each marked with an itinerary from Gades (Cadiz) to Rome.[20] The vases have been dated to between 7 B.C. and A.D. 47. It is quite likely that the goblets were made as an offering to Apollo or any other divinity of the spring. Thirty-four other vases were also found: three of gold, twenty-five of silver, and six of bronze. Many of them are inscribed with dedications to Apollo, Nymphs, Silvanus, and Asclepius, all divinities regularly associated with healing and/or springs (fig. 33).[21] Others are decorated with figures or floral motifs.

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[18] Colini 1968; Künzl and Künzl 1992.

Statuary from Spas

Archaeology has not produced a large sample of sculptural material from spas and many of the sites excavated have yielded little or no large-scale statuary. Several sculptural fragments are in too poor a state of preservation for detailed analysis. The following discussion focuses on sculpture recovered from seven spas: Agnano, Teanum Sidicinum, Aquae Vescinae, Aquae Tauri, Vicarello, Baiae, and Aquae Aponi.

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[19] Colini 1968, 51; Colini 1979, 18.

[20] *CIL* 11.3281-3284; O.A.W. Dilke, *Greek and Roman Maps* (London, 1985), 122-124; J. Heurgon, "Le date des gobelets de Vicarello," *Revue des Etudes Anciennes* 54 (1952): 39-50.

[21] See discussion below.

Asclepius is the most prominent as the best known of the healing gods.[22] Several fragments from Aquae Vescinae preserve his arm, foot, and staff with an entwined serpent.[23] A bearded head (fig. 34) found near the hot spring at Vicarello has been identified as Asclepius. Two other statues from Aquae Aponi can also be interpreted as Asclepius. The first (fig. 35) preserves only a portion of a snake and staff, but as these are customary attributes of the healing god, the identification is certain. The second is more problematic and portrays a nearly-complete male (fig. 36). He wears a mantle around his hips falling to his legs and thrown across his left shoulder and arm. The bare torso and curly hair with a light beard is similar to representations of Asclepius. It has been suggested that this statue portrays the god *Aponus*, as a divinity of the springs and guardian of health. Another suggestion has been that this is a local official with the attributes of a healing god.[24]

A statue of Apollo was found in a nymphaeum associated with the baths at Vicarello.[25] Apollo, in this context, must be considered in his role as a healing god. His representation, together with the inscriptions on the votive offerings, makes it quite likely that this spa was known as Aquae Apollinares. An image of Apollo is also known from Baiae, where a marble head was found just to the east of the Baths of Mercury (fig. 51).

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[22] C. Kerényi, *Asklepios. Archetypal Image of the Physician's Existence* (New York, 1959); Bernard Holtzmann *LIMC* 2 (Munich, 1984), s.v. Asklepios, 863-901.

[23] Fulvio 1887, 409 (not illustrated).

[24] *Delle antiche terme di Montegrotto* 1997, 116.

[25] Künzl and Künzl 1992, 274; L. Fabrini, "L'Apollo di Vicarello e l'inserimento del suo prototipo nell'ambito della scultura antica del IVo secolo a.C.," *RömMitt.* 90 (1983): 1-33.

Nymphs are also commonly found at spas. Their association with healing springs and Asclepius made them appropriate for display. They are generally depicted as young women or girls, often with hair which is fastened at the back of the head. A female head from Agnano may represent a nymph (fig. 38). A figure identified as a nymph recovered from Aquae Vescinae portrays a female wearing a mantle around her waist and leaves the upper part of her body exposed.[26] Her head and arms are not preserved. Three other female figures are also known from this spa; one has a wreathed head.[27] It is possible that these three are also nymphs, although the state of preservation is too fragmentary to be conclusive. At Aquae Tauri, a marble head of a young woman was found in Room C which probably represents a nymph (fig. 52). The piece portrays a young girl with a chubby face and wavy hair arranged in a knot or bun at the rear top of her head typically seen in figures of nymphs.[28] Her identification is further supported by her proximity to an altar dedicated to the nymphs (fig. 53).[29]

Venus is a figure regularly found in baths and she also appears in healing spas.[30] Her images would have been suitable for display in these contexts because she is associated with ideas of beauty and luxury and because of her general connections to health.[31] At Agnano, the goddess is portrayed preparing for a bath (fig. 39). She pulls a cloth around her lower hips; it is not clear whether she is putting it on or taking it off. Her hair falls down her back, loosely tied at the nape of her neck. The Agnano statue bears some resemblance to the Cnidian Aphrodite and to the Capitoline Venus, especially in her stance and coiffeur.[32] Another statue of Venus which is related to that of the Capitoline Venus comes from the baths at Teanum Sidicinum (fig. 46). She is also shown in preparation for a bath and has placed a cloth on an object beside her. A third statue of the goddess was found at Agnano and has been identified as representing a Venus Armata (fig. 41). Standing in front of a cuirass, she is shown wearing only greaves on her feet and a sword-strap across her breast. A small figure of Eros was originally beside her feet; only traces of his feet remain. In the so-called Baths of Sosandra at Baiae, there was a statue known as Aphrodite Sosandra (fig. 50). She wears a heavy mantle which is pulled across her front up to her shoulder. Her head is also covered and she wears a lighter garment underneath.

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[26] Fulvio 1887, 410 (not illustrated); alternatively, the figure may be identified as Venus.

[27] Fulvio 1887, 409 (not illustrated).

[28] For another nymph portrait, see Brunilde Ridgway, *Hellenistic Sculpture* I, (Madison, 1990), 322-325, pl. 161a-b.

[29] Bastianelli 1933, 409.

[30] For a discussion of the popularity of statues of Venus in baths, see Dunbabin 1989, 24-25.

Two figures from Teanum Sidicinum may be identified as Erotes. The first portrays the head of a small child, perhaps with something in his lips (fig. 45). The second is a young boy, wearing only a mantle pulled over his head (fig. 44). As Eros has no specific bathing or healing function, his presence may be explained as an extension of the representations of Venus.

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[31] See W. Jayne, *The Healing Gods of Ancient Civilizations* (New York, 1962), 306.

[32] See Martin Robertson, *A History of Greek Art* (Cambridge, 1975), 390-391, 548-549; Ridgway 1990, 355-356.

A statue of Hermes with the infant Dionysus is known from Agnano (fig. 40).[33] The fragment preserves the torso and thighs; the end of Hermes' staff is visible at the top of his right arm. A cloak pinned on his right shoulder falls across his chest and left side. Dionysos, no longer preserved, would have been held in Hermes' left arm. At Aquae Tauri the bearded head of a Herm was found as well as the base on which it may have stood. As god of the palaestra and gymnasium, Hermes represents youth and vigour.[34] Perhaps his image was viewed as an inspiration to those using the spa. His role as a leader of souls to the Underworld also had clear implications for those seeking health, and in this function Hermes can be seen to have some association with healing as a guardian of life.[35]

Dionysos is also an appropriate figure to have in a spa. In his normal role as the god of wine and intoxication, he is the god who is capable of freeing the mind from cares and troubles. But Dionysos also had specific associations with healing.[36] Among his healing abilities, Plutarch reports that his priests were able to cure by touch and by interpreting dreams.[37]

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[33] The illustration in Macchioro's publication, fig. 15, shows a modern restoration of the sculptural group. The actual fragment in fact only preserves the torso and legs; the infant Dionysius, the ram, and the lower legs are not ancient.

[34] Walter Burkett, *Greek Religion* (Cambridge, Massachusetts, 1985), 158.

[35] For a discussion of Hermes as a healing god, see Jayne 1962, 331-332.

[36] See Jayne 1962, 318.

[37] Plutarch *Quaest. conv.* 3.3.

Two statues of satyrs may have associations with Dionysus or with the Nymphs. Only the head of one is preserved from Agnano.[38] A second comes from Teanum Sidicinum and is in fragmentary condition, with only the torso and a portion of the left leg remaining (fig. 43). He wears a cloak fastened at the shoulder. The statue's attribution is based on the fluidity of the rendering of the torso, making it similar to other more complete examples of the subject.[39]

At Aquae Aponi, a statue of a young male has been recovered from the area of the thermal centre (fig. 37). The upper half of the figure is preserved and portrays a plump youth with curly hair wearing a short cloak across his right shoulder, chest, stomach, and back. His right arm is bent at the elbow towards his mouth. This statue has been identified as Harpocrates. This attribution seems to have been based on the body of the figure - soft, fleshy, and plump - typical characteristics for representations of the god.[40] The identification as Harpocrates is also suitable for a statue found in a healing spa. Harpocrates, or Horus-the-Child, is represented on several Egyptian stelai and cippi which have incantations against various stings or bites. He usually stands on a crocodile as a symbol of his ability to overcome evil forces.[41] As the son of Osiris, ruler of the afterlife, and Isis, the goddess of nurturing and abundance, his role as a god associated with healing is appropriate. Furthermore, the spread of Egyptian cults, especially of Isis and Sarapis, would have encouraged the worship of Horus-the-child.

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[38] Macchioro 1912, 284. The original identification must have been based on the ears and face of the figure; only an inadequate and small image was ever published and the piece is now lost.

[39] cf. Cornelius Vermeule, *Greek and Roman Sculpture in America* (Berkeley, 1981), 162-163; Ridgway 1990, pl. 159a-d.

[40] J. Cooney, "Harpocrates, the dutiful son," *Cleveland Museum of Art Bulletin* 59 (1972): 284-290.

[41] J. Nunn, *Ancient Egyptian Medicine* (London, 1996), 107-110.

Two other statues from spas may have links to the gods associated with healing. A sculpture of a standing youth holding a goose is known from the baths at Teanum Sidicinum (fig. 48). He has loose, wavy hair and is wearing nothing; the goose is held in his left hand. A second statue fragment represents a pyramidal composition of a boy and goose from Aquae Vescinae.[42] The subject is known from many examples, including those in the Glyptothek in Munich, the Capitoline Museum and the Thermae Museum in Rome, and the Louvre in Paris. The subjects of both examples, although handled differently, are clearly related, and to judge from the style of execution and topic, are Roman copies of Hellenistic originals.

Scholars have offered different interpretations of the figures in the popular pyramidal group. It has been suggested that the child may be Harpocrates and the goose may either be the sacred goose of Geb, the father of Osiris or may represent Osiris himself, normally not shown in Roman art.[43] The hairstyle provides a further connection to Harpocrates. He is usually shown with a side-braid of hair; the child with the goose has a variation of this and generally wears his hair in an exaggerated top-knot. And, as already indicated, the Egyptian god is often shown as a plump child. Another interpretation of the scene of a boy holding a goose is that it refers to Heracles in a mock epic rendering of the myth of the god battling the snakes.[44] A third possibility is that the piece represents a genre scene of a childish, light-hearted subject, in which the goose is the pet of the child.[45] A final suggestion is that the group portrays one of the sons of Asclepius overcoming the goose which symbolically represents marsh fever.[46] I would suggest that none of these interpretations need be excluded. Many of the sculptures from the Hellenistic period offer themes which are not limited to a single idea and are able to conflate concepts of mythology, religion, and ordinary life into one work.[47] It is likely that the figure of a boy holding a goose from Teanum Sidicinum, which portrays a slightly older youth, alludes to similar ideas as the pyramidal group.

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[42] Giglioli 1911, 48 (not illustrated). For a similar statue, see fig. 49.

[43] A. Kozloff, "Harpocrates and the Sacred Goose," *The Ancient World* 3, no.3 (1980): 80-81. On the goose in the Roman world, see J.M.C. Toynbee, *Animals in Roman Art and Life* (Baltimore, reprint 1996), 261-264.

The head of a bearded figure from Teanum Sidicinum probably represents a river god (fig. 47). His long beard and flowing locks of hair are suggestive of the movement of water. River gods appear regularly in baths.[48]

Only two pieces of sculpture are lacking a definite association that would make them clearly suitable for placement in a spa. The first, from Agnano, is a statue identified as Ganymede (fig. 42).[49] He leans in a relaxed pose against a tree, with his left foot crossed over his right. A cloak is fastened on his left shoulder and is draped down his back. To judge by the position of his left hand, the figure would have held a stick. A small winged Eros stands at his feet; he is a substitute for the eagle normally placed with figures of Ganymede as a symbol representing Zeus. A second sculptural fragment is preserved from Aquae Tauri, consisting of the lower portion of a barefoot figure wearing a full-length chiton (fig. 54). It is unknown what the complete statue portrayed.

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[44] Ridgway 1990, 232.

[45] J.J. Pollit, *Art in the Hellenistic Age* (Cambridge, 1984), 128-130.

[46] J. Charbonneaux, *La Sculture Grecque et Romaine au Musée du Louvre* (Paris, 1963).

[47] Consider, e.g., the Old Fisherman from the Capitoline Museum, Rome who embodies "a peculiar mixture of poetic fantasy and social realism." (Pollitt 1984, 146).

[48] Dunbabin 1989, 27.

Some sense of the placement of these statues can be gained from the architecture of the buildings. At Aquae Tauri (fig. 15), at the east end of Room C, an elaborate arrangement was created with the intention of providing a shrine-like space composed of a large niche for a statue. Similarly, at Aquae Vescinae, at the rear of the atrium (fig. 3, room 2), a large central niche flanked by two smaller ones all could have held statues, fragments of which were recovered during excavations. Two of the statues (Venus Armata and Ganymede) from Agnano were placed in niches around the pool of the cold room (fig. 2, room C). The other two (Hermes with infant Dionysius and Bathing Venus) were placed along the west wall of the same room.[50] At Teanum Sidicinum, room D (fig. 13) was the most elaborately decorated. At the rear absidal wall three statuary niches were placed, with the central larger one placed 1.90 m above the level of the floor; two flanking ones were placed 2.10 m above the floor. In a comparable manner, at Baiae, each of the large round thermal-mineral pool halls which articulated by a series of tall niches must have been designed to hold statues.

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[49] This identification was made by the exacavator Macchioro and has been recently repeated by Amalfitano 1990, 67. A reappraisal of the statue, however, is necessary and it surely must be identified as a copy of Skopas' Pothos, well-known in antiquity to judge by the numerous versions of it preserved. An exact identification of the Pothos figure awaits further scholarship, although it has been noted that it is "Eros-like (or even Hermaphroditic) in appearance" by Ridgway. Good discussion and recent bibliography on the Pothos is available in Ridgway 87, 103-104.

[50] Amalfitano 1990, 65.

Large-scale statues of many gods had a place in spas, both as a decorative element and as an implicit reference to the divinities associated with bathing and health. Statues of deities were also frequently found in ordinary bathing establishments, yet it is likely that in these contexts the cult association was secondary to the purposes of decoration.[51] It appears that images of gods were integral to creating the appropriate spa atomsphere. But as most major deities had healing powers, the existence of these powers should not be taken as the sole reason for their representation in the spas.

Written Evidence

Inscriptions

Another source of information about the religious nature of spas is provided by inscriptions on offerings made to divinities associated with the establishment. The majority of these inscriptions are dedicatory. Although many identify spas by name, relatively few are directly related to aspects of worship and cult. Several inscriptions occur on the precious objects from Aenaria and Vicarello which have already been discussed as votive offerings. The common phrase *votum solvit* implies that the dedicant received a benefit believed to have been brought about by the resources of a divinity.

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[51] "When the gods (such as Aesculapius and Hygieia, or Hermes, Hercules, and Aphrodite) were admitted into this profane world, they were chosen because of their traditional association with the subject of health, hygiene, physical prowess, and beauty." Yegül 1992, 124-125.

On sculpture in baths, see H. Manderscheid, *Die Skulpturenausstattung der kaiserzeitlichen Thermenanlagen* (Berlin, 1981); M. Marvin, "Free-standing sculptures from the Baths of Caracalla," *AJA* 87 (1983): 347-84; C. Gasparri, "Sculture provenienti dalle Terme di Caracalla e di Diocleziano," *RivIstArch* s.3 (1983-1984): 6-7, 133-50.

The most common reference to divinities is to nymphs.[52] They are commonly associated with water and springs, making their presence appropriate at baths.[53] Dedications to nymphs are found not only at spa sites, but also at hot springs which were known for their healing capabilities but which may have remained undeveloped.[54] Ritual activity which focused on the worship of the nymphs of a thermal-mineral spring is one aspect of the development of springs into spas.

In a few cases, an unspecified nymph is the recipient of a dedication. This is the case at Aquae Sinuessanae where an inscription is dedicated *nymphis sanct(is) novis repertis*,[55] at Aquae Tauri where the dedication on an altar is νυμφαῖς (fig. 53),[56] and at Puteoli where an inscription is dedicated *nymphis.*[57] At Vicarello, there is a dedication *Nymphabus.*[58]

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[52] For nymphs in Italy, see Fritz Heichelheim, *RE* ser. 1, 34 (Stuttgart, 1937), s.v. Nymphai (Kultstätten), 1568-1569; For a summary of the Greek evidence about nymphs which distinguishes between those of springs and those of forests, see T. Gantz, *Early Greek Myth* (Baltimore, 1993), 139-143; Also, J. Toutain, *Les cultes païens* I (Rome, 1967), 380-384; L. Deschamps, "Varron, les lymphes et les nymphes," in *Hommages à Robert Schilling* (Paris, 1983): 67-83.

[53] Dunbabin 1989, 12-32.

[54] eg. at *Forum Traiani: Nymp[his] / salutari[bus] / Aelius Per[egri]/nus, proc(urator) A[uggg(ustorum trium?)] / praef(ectus) prou(inciae) S[ard(iniae)]* (*AE* 1991, 908). Also, in the same town, two examples dedicated to nymphs found near a hot spring: *CIL* 10.7859; *CIL* 10.7860.

Some of the common epithets for the healing role of nymphs: Medicae (*CIL* 3.10595); Salutares (*CIL* 3.10891, 10893); Salutiferae (*CIL* 3.1397).

[55] *CIL* 10.4734.

There are several instances in which a nymph is more specifically identified. On three of the inscriptions on the votive reliefs from Aenaria, the nymphs are named as the "Nitrodes Nymphae".[59] Forti suggests that the adjective refers to nitrate springs with a Latinized form of the Greek word, τό νίτρον.[60] It may be that other inscriptions from Aenaria dedicated to nymphs without an identifying adjective should also be considered as referring to the Nitrodes nymphs.[61]

At Aquae Apollinares, a dedication was made *Nymphis Domitianis,* whose epithet may allude to an interest the emperor Domitian had in the healing powers of the waters.[62]

Gods who were specifically recognized as having healing powers also are well-represented in the inscriptions from spas. Occasionally, Apollo is invoked by himself.[63]

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[56] Mengarelli 1923, 343.

[57] *CIL* 10.1592.

[58] *CIL* 11.3290.

[59] *CIL* 10.6786: Nymphis Nitrodibus; νυμφαῖς Νιτροδέσι; *CIL* 10.6789: Nymphis Nitrodis; *CIL* 10.6790: Nymphis Nitrodiaes.

[60] Forti 1952, 163.

[61] *CIL* 10.6791; *CIL* 10.6794; *CIL* 10.6795 (these examples are not discussed by Forti); *CIL* 10.6787 = Forti, tav. VII.2; *CIL* 10.6788 = Forti, tav. IX.2; *CIL* 10.6793 = Forti, tav. VI.2; *CIL* 10.6796 = Forti, tav. XI.1; *CIL* 10.6797 = Forti, p. 186-187; *CIL* 10.6798 = Forti, IX.1; *CIL* 10.6799 = Forti, tav. VIII.2.

[62] Colini 1979, 18-19.

[63] For Apollo in the guise of a healer in Gaul, see J.J. Hatt, "Apollo guérisseur en Gaule," in Pelletier 1985, 204-238. Also, T. Gantz 1993, 95-98.

At Vicarello, there is a dedication *Apollini sancto*.[64] At Bagni di Stigliano, a recent discovery indicates that Apollo was worshipped at the location: here too there is a marble inscription *Apollini sancto*.[65] At Aquae Aponi, one inscription identifies Apollo.[66]

Apollo could also be invoked together with the nymphs. At Aenaria, three votive reliefs have dedications to Apollo and the nymphs.[67] Other reliefs have a figure of Apollo shown together with the nymphs, who are named in the inscription (e.g. fig. 29b).[68] At Vicarello, several dedications occur to Apollo and the nymphs; in one case there is a direct reference to health ~~in an~~ offering *pro salute* (*CIL* 11.3287).[69]

In two cases at Vicarello, an attempt was made to include as many gods as could be propitiated in a single dedication. Thus, Apollo, Silvanus, the Nymphs, and, in one case, Asclepius were named together in the inscription.[70]

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[64] *CIL* 11.3285.

[65] Gasperini 1988, 35 no. 27.

[66] Lazzaro 1981, 145 (Apollini). Dedications at Aquae Aponi represented as *A(quis) A(poni)*. E.g., *CIL* 5.2783-2790.

[67] *CIL* 10.6786: Apollini et Nymphis Nitrodibus; *CIL* 10.6787: Apollini et Nymphis; *CIL* 10.6788: Apollini et Nymphis.

[68] *CIL* 10.6793 = Forti, tav. VI.2: Apollo with a lyre accompanied by three nymphs; *CIL* 10.6796 = Forti, tav. XI.1: Apollo with lyre accompanied by three nymphs; *CIL* 10.6798 = Forti, tav. IX.1: Apollo with lyre and tripod accompanied by three nymphs

[69] *CIL* 11.3286: Apollini et Nymphis Domitianis; *CIL* 11.3287: Apollini sancto et Nymphis; *CIL* 11.3288: Apollini et Nymphis sanctis.

[70] *CIL* 11.3289: Apollini Silvano Nymphis; *CIL* 11.3294: Apollini Silvano Asclepio Nymphis. For Asclepius, see the monumental work by L. Edelstein, *Asclepius* 1 and 2 (Baltimore, 1945). For discussion on the cult of Silvanus, see: Peter Dorcey, *The Cult of Silvanus: A Study in Roman Folk Religion* (Leiden, 1992); V. Hutchinson-Pennanen, "New light on the cult of Silvanus," *JRA* 7 (1994): 475-479, especially p. 479 which

At Aquae Vescinae, an inscription dedicated to Hygieia was found in the outlet of a thermal-mineral spring.[71]

A number of gods who do not necessarily have a primary role as healers are also indicated in the inscriptions. Thus, at Aquae Caeretanae, one inscription refers to Jupiter and another refers to Jupiter and Hercules.[72] A dedication *Mercurio Augusto* attests to worship of Mercury at Aquae Statiellae.[73] At Aquae Statiellae a marble base was found with an inscription recording a dedication by three freedmen to *Genio patroni nostri.*[74] Another *genius* was named in an inscription found at Aquae Vescinae.[75]

Literary Texts

The literary sources reveal little about the nature of cult activity or religious belief at spas. Few texts have any direct references to the presence of divinities at particular

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addresses Silvanus as a healing god.

[71] Fulvio 1888 and Giglioli 1911; For a recent assessment of the role of the goddess of health, see H. Sobel, *Hygieia* (Darmstadt, 1990).

[72] *AE* 1989.305: Iovi. *AE* 1992.599: Iovi | et Herculi...
P. Sabbatini Tumolesi suggests that the presence of Hercules as a healing god is unusual in Etruria (*Boll. d'Arch.* 7 (1991): 80-82). However, Heracles as a god of hot springs is otherwise attested. Moreover, Livy identifies Aquae Caeretanae as having a fountain of Hercules. (Livy 22.1.10).

[73] *AE* 1991.726 = *CIL* 5.7423: *Mercurio / Aug(usto).* In this case, Augustus is "added mechanically as a standard convention." The actual worship is to Mercury. See D. Fishwick, *The Imperial Cult in the Latin West* 2.1 (Leiden, 1991), 448-450.

[74] *AE* 1987.404 = *CIL* 5.7505: *Genio / p(atroni) n(ostri).*

[75] *AE* 1914.217: *Genio Aquarum Vescinarum.*

establishments. There are occasional allusions to the sanctity and healthfulness of springs, nymphs, or particular gods, but, on the whole, these do not provide a clear picture of the religiosity of a spa.

A letter from Seneca to Lucilius reveals the religious belief which could exist with respect to springs.[76] He says that springs of hot water are worshipped as divine.[77] The remark reveals the great appreciation he held for nature and its causes. He apparently sees no contradiction between the belief in the divinity of springs and his interest in natural science and rational medicine. His efforts to explain the cause of thermal-mineral springs as part of natural science arise from his Stoic philosophy.[78]

Nymphs, in their healing capacity, are several times referred to by Martial. At the baths of Aquae Sinuessanae, they are identified as having a role in the healing of a visitor named Philostratus. Martial implies that had Philostratus consumed the waters of the nymphs, he would not have met with such an unpleasant end.[79] Two other epigrams suggest that the springs of the nymphs would be beneficial for health.[80]

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[76] There are many passages which relate to the powers of healing springs in general. To discuss them fully would be beyond the scope of the current work. For an overview of springs known from literary references, see J. R. Smith, *Springs and Wells in Greek and Roman Literature* (New York, 1922).

[77] Seneca *Ep.* 41.3.

[78] Seneca *QN* 3.1-16. See M. Griffin, *Seneca: A Philosopher in Politics* (Oxford, 1976), 40-42; French 1994, 166-178.

[79] Martial 11.82.

[80] Martial 6.47; 9.58.

There are a number of references to the practical function of several different divinities at spas. Traditionally, Heracles was the god of hot springs and this role is identified by the written sources on spas.[81] Livy refers to his spring at Aquae Caeretanae.[82] Propertius says that the shores at Baiae are made by Hercules, probably referring to the hot springs present there. Diodorus Siculus also refers to Heracles' activity in the same area, specifically at Lake Avernus.[83] In later sources, different gods emerge in the same role of heating the waters at spas. Florus says that Phoebus (or Apollo) heated the baths.[84] Regianus, a poet from the Vandal period who is known only from the Latin Anthology, says in one poem that when Love carried a light in the waters at Baiae, a spark fell and heated the waters.[85] In another poem, the poet relates that Vulcan is responsible for warming the waters.[86] Claudian also attributes the heat of the springs at Aquae Aponi to Vulcan.[87]

Other general associations with divinities occur in the literary texts. The thermal-mineral waters at Baiae are called *sacris* by Tibullus.[88] They are associated with Venus and Mars.[89] Venus, as we have seen, was typically found in contexts of bathing and health. Mars also had a role as healer, but is not normally found at baths.[90] It would appear that reference to these gods at Baiae had as much to do with their status as lovers as with their association with health. Martial also refers to Phoebus, presumably in his guise as a healing god, in a context which seems to refer to Aquae Apollinares.[91]

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[81] See John Boardman, *LIMC* 4.1 (Munich, 1988) s.v. Herakles, 797. Also, G. Moitreux, "Hercule et le culte des sources en Lorraine," in Chevallier 1992, 67-76.

[82] Livy 22.1.10.

[83] Propertius 1.11.1-2; Diodorus Siculus 4.21.6.

[84] Florus *Anth. Lat.* 111, 112.

[85] Regianus *Anth. Lat.* 265.

[86] Regianus *Anth. Lat.* 264.

[87] Claudian *Carm. Min.* 26.17-18.

[88] Tibullus 3.5.

A more explicit description of cult activity is provided by Pliny's account of the setting at the source of the Clitumnus.[92] The main temple is dedicated to the river god, Clitumnus. In addition, smaller shrines for other spring gods are present, but these lesser divinities are left unnamed.

The lack of references to divinities at spas is somewhat curious. It would appear that in the descriptions of activity in spas, there was a much greater interest in the rational procedures which occurred. The few allusions to gods at spas are found almost only in the poets, who regularly make mythological references without clear cult implications. To judge from the literary record, the main activity inside the spas was one which did not include a direct association with the gods.

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[89] Martial 11.80; Regianus *Anth. Lat.* 266.

[90] Jayne 1962, 432-433.

[91] Martial 6.42.

[92] Pliny *Ep.* 8.8.

General Observations

Given the fragmentary nature of the evidence, a precise interpretation of the nature of cult activity is elusive. The worship of divinities (particularly nymphs) clearly had a role in the context of spas, but it seems to have been practiced primarily outside the actual physical space of the establishments. This is most clearly visible in the location of votive offerings and the inscriptions on them, which are generally found in or near thermal-mineral springs connected to the baths. Because most of the sculpture found in spas is not particular to the function of healing, it cannot be proven to be anything other than decorative, despite the healing capabilities of many of the gods represented. The lack of literary references which link any worship of healing gods with curative treatment furthers the argument against specific cult activity at the spas.

Although spas may have had cult origins in the worship of springs with healing properties, as attested by the presence of early votive offerings, in their developed form they demonstrate little in the way of religious activity. The religious associations, in a sense, serve as a back-drop to the conviction that actual medical procedures were obtainable at a spa.

Conclusion

The practice of using natural mineral springs for the purposes of restoring or gaining health led to the development of a major institution in the Roman world - the healing spas. More than thirty of these establishments are known to have existed in Italy at the high point of their popularity, and they were available to a wide range of social classes. The large number of spas which dotted the countryside made it possible for virtually anyone to seek health from the curative waters. It is clear that spas played an important role in Roman medicine, and that these facilities were aimed at treating many different types of illnesses and disorders.

Although little is known about the design or operation of the earliest spas, it is clear that they existed long before the increase in popularity of bathing which is documented to have occurred in the first century B.C. in Rome. The information about these early spas is, unfortunately, fragmentary and it is only through a few tantalizing glimpses which Livy and Plutarch offer together with a small amount of inscriptional evidence that any image at all emerges.

It is not until towards end of the Republic that evidence for spas begins to appear more regularly. Baiae, known archaeologically to have developed by the first century B.C., serves as the clearest example of this. Its popularity is evident both from the many literary references and from the increase in building activity of the area. Wealthy Romans, such as Marius, Hortensius, and Varro, while staying at their luxury villas, almost certainly enjoyed the benefits of the thermal-mineral springs. Even Cicero, clearly disdainful of the crowds who frequented the spa, is nevertheless aware of the attractions of the resort.

In the Augustan Age, a greater presence of spas is evident from the frequent literary references to the establishments. It is a clear indication of their popularity that they are mentioned in the writings of Vitruvius and Strabo, both of whom provide abundant information on the distribution and characteristics of the main developments in spas.

From the middle of the first century through to at least the end of the second century A.D., the number of spas continued to increase. Many spas, including Baiae, Aquae Tauri, and Aquae Caeretanae which were already well-established in the Augustan age, underwent extensive renovations and changes during this period. Other spas such as Aquae Aponi, and Aquae Vescinae seem to have been developed at this time into complete bathing facilities which used thermal-mineral springs. Incidental comments about specific spas become more frequent as general knowledge about their benefits becomes increasingly dispersed. Pliny the Elder compiles more material about spas than either Vitruvius or Strabo; he identifies over a dozen places in Italy where thermal-mineral waters could be used in a developed facility. Celsus recommends a number of places where thermal-mineral cures can be obtained. Suetonius describes how several different emperors used thermal-mineral waters, without explicit detail. Martial sets various poems in spas, perhaps assuming that their locations and reputations were well-known. Soranus and Galen mention the benefits of spas; but provide little additional information. If any of these writers had thought that his audience would not be familiar with the institutions, he might have felt it necessary to give more detail.

It is difficult to analyze the status of spas in the third century because there is less information available from the written sources. One exception to this is Dio Cassius. He does not provide unnecessary topographical background when describing an event which took place at a spa, thereby suggesting that these places continued to be well-known to his contemporaries.

By late antiquity, only a few spas remained prominent in Italy. Baiae's fame continued to reach far and wide. Not only did extremely wealthy individuals such as Symmachus and his friends frequent its baths, but the reputation of Baiae was such that other spas were compared to it.[1] Aquae Tauri continued to be used at least until the fifth century and the baths at Aquae Aponi were even restored from a dilapidated state to their original splendour in the sixth century.

Epigraphy and literature attest to the fact that people of all classes visited spas. There is certainly a more prominent presence of the upper classes, including the emperors, but this is in part due to the nature of the evidence which tends to be biased in favour of that part of society. In particular, the *familia Caesaris* and *ingenui* are well-represented as visitors to spas. Freedmen were present in moderate numbers and only a few slaves are evident from the inscriptions. Despite the fact that the epigraphic evidence does not reveal many females, the recommendations by Soranus to use mineral waters for treating gynaecological disorders and Martial's observations about the activities of women at spas confirm that women were sometimes present at spas. Some spas, especially Aquae Albulae and Aquae Caeretanae, seem to have attracted particular types of clientele. Other locations famous for their spas, e.g., Aquae Aponi and Baiae, appear to have had many different facilities available which could presumably accommodate different classes of visitors.

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[1] In fact, this delight in Baiae continued well into the Middle Ages. *De Balneis Puteolanis,* written by Peter of Eboli, describes the many establishments available for various ailments in the Baian area. The text makes it quite clear that vast numbers of people had an interest in visiting Baiae, even up to the time when the thermal-mineral springs were destroyed by seismic activity in the mid-sixteenth century. For more on the manuscript tradition and the drawings, see Raymond Clark, "Peter of Eboli, 'De Balneis Puteolanis': Manuscripts from the Aragonese Scriptorium in Naples," *Traditio* 45 (1989-1990): 380-389; and Yegül 1996, 148-155.

What seems to have been central to the use of spas throughout the Roman period is the continual belief that it was principally the mineral spring waters which facilited a cure. Ordinary bathing certainly was an important factor in the improvement of health and hygiene, but the Romans believed that the spas offered a distinct medical treatment for health problems. In this light, it is important to recognize spa bathing as a specialized type of medical treatment. This distinguishes it from being merely a variant of ordinary bathing. To pinpoint the differences with respect to the archaeological evidence is no easy task, for by necessity the architecture in spas, which focused on bathing, was virtually the same as that at ordinary baths. To be sure, as I have demonstrated, there are characteristic features found at spas which were particularly suited to the needs of mineral spring bathing. But, in many cases, these same features could also be found in ordinary baths. The most important aspect of a spa, then, was not the architectural design of the establishment, but the availability of mineral springs which were understood to be therapeutic.

Whether spa-bathing was medically sound is also a difficult problem to assess. It is hard to imagine that a trip to a spa - more often than not located in beautiful surroundings, generally quite luxurious and comfortable, and focused entirely on answering the needs of the client - would not have resulted in improving one's health.[2] Whether a treatment using thermal-mineral waters was actually effective is less easy to establish, and it is hard to determine from the preserved evidence whether the springs were the actual cause of restoring health. In any case, the testimony offered by the numerous dedicatory inscriptions, frequent recommendations by medical writers and non-specialists, and the existence of many thermal-mineral establishments throughout Italy and the rest of the Roman world, provide an unequivocal demonstration of the important role spas had in Roman medicine.

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[2] Modern medical practice in some countries continues to advocate the use of balneology and thermal-mineral springs. See, for example, Y. Agishi and Y. Ohtsuka, *Recent Progress in Medical Balneology and Climatology* (Sapporo, 1995); S. Licht, *Medical Hydrology* (Baltimore, 1963).

Catalogue of Spas in Italy

Although most of the entries in this catalogue can be considered fully or partially developed establishments, the exact nature of several locations is uncertain. I have not tried to be exhaustive; rather, I have sought to include the best-known spas and those recommended specifically by the medical writers. Springs which were generally regarded as beneficial but were not recommended for specific ailments have not been included.

Key: *AS = ancient sources*
H = state of research
B = modern bibliography

1) Ad Nonum (Ponte di Nona)
AS: n/a
H: excavation of votive deposits
B: Potter 1985; 1989

2) Aenaria (Ischia)
AS: Caelius Aurelianus *Chron* 5.4.77; 5.10.126; Pliny *HN* 31.5; Ovid *Meta.* 15.712; Strabo 5.4.9;
H: fourteen votive reliefs
B: Forti 1951

3) Agnano
AS: n/a
H: excavation of extensive bath building
B: La Forgia 1985; Macchioro 1912

4) Anxur
AS: Horace *Sat.* 1.5.24-26; Martial 10.51.7-10; 10.58; 5.1; 6.42
H: n/a
B: n/a

5) Aquae Albulae (in Bagni di Tivoli)
AS: Avitus *Anth. Lat.* 259; Caelius Aurelianus *Chron.* 3.1.10; 2.1.48; 5.2.40; Galen *De meth. med.* (Kühn X.536); *De simp. med.* (Kühn X.393); Martial 1.12.2; 4.4; Pausanias, 4.35.10; Pliny *HN* 31.6; Seneca *QNat.* 3.20.4; Statius *Silv.* 1.3.74; Strabo 5.3.11; Suetonius *Aug.* 82.2; Suetonius *Nero* 31.2; Vitruvius 8.3.2
H: excavation of bath
B: Mari, 293-317

6) Aquae Angae
AS: *Tab. Peut.*
H: unidentified location
B: Spadea 1982, 88-89; Maddoli 1982

7) Aquae Apollinares
see 33)

8) Aquae Apollinares
see 48)

9) Aquae Aponi / Aponenses
AS: Ausonius *Ord. Nob. Urb.* 19.159-162; Avitus *Anth. Lat.* 23; Caelius Aurelianus *Chron.* 2.1.48; Cassiodorus *Var.* 2.39; Claudian *Carm. min.* 26; Martial, 1.62; 6.42; Pliny *HN* 2.106.227; 31.32; Suetonius *Tib.* 14
H: various excavations in area, including major bath complex
B: *Delle antiche terme di Montegrotto* 1997; Lazzaro 1981; Migliolaro 1956

10) Aquae Auguriae
AS: Caelius Aurelianus *Chron.* 5.4.77
H: unidentified location
B: n/a

11) Aquae Caeretanae (Piano di Carlotto, south-west of Civitavecchia)
AS: Caelius Aurelianus *Chron.* 2.1.48; Livy 22.1.10; 22.36.7; Strabo 5.2.3;
H: recent excavations of partial bath complex
B: Cosentino and Tumolesi 1989; Cosentino 1992; Tumolesi 1992

12) Aquae Calidae ad Vetulonios (Poggetti dei Giuggioli)
AS: Pliny *HN* 2.106.227; *Tab. Peut.*
H: limited survey
B: Curri 1978, 201-202; Pifferi 1963, 345-348.

13) Aquae Cumanae
see 34)

14) Aquae Cutiliae (near Cittaducale)
AS: Caelius Aurelianus *Chron.* 3.1.10; 3.2.45; 5.2.40; 5.4.77; Celsus 4.12.7; Dio Cassius 66.17; 66.26; Dionysius of Halicarnassus 1.15; Macrobius *Sat.*. 1.7.28; Pliny *HN* 2.96.209; 3.12.109; 31.6; 31.32; Seneca *QNat.* 3.25.8; Suetonius *Vesp.* 24; Strabo 5.3.1;
H: recent excavations of bath and villa
B: De Palma 1985; Reggiani 1979

15) Aquae Labanae (between Eretum and Nomentum)
AS: Strabo 5.3.11
H: unidentified
B: n/a

16) Aquae Labodes
AS: Diod. 4.78 (Thermae Selinuntiae); Strabo 6.275 (Thermae Selinuntiae); *Tab. Peut.*
H: n/a
B: n/a

17) Aquae Nepesinae (Bagni di Gracciolo?)
AS: Caelius Aurelianus *Chron.* 3.2.45; 3.1.10; 5.4.77
H: n/a
B: Gasperini 1988

18) Aquae Passeris (near Viterbo)
AS: Martial 6.42; *Tab. Peut.*
H: n/a
B: Gamurrini et al., 72; Gasperini 1988, 30

19) Aquae Patavinae
see 9)

20) Aquae Pisanae
AS: Pliny *HN* 2.106.227
H: n/a
B: n/a

21) Aquae Pithecussae
see 2)

22) Aquae Populoniae
AS: *Tab.Peut.*
H: n/a
B: Pifferi 1963, 343-345.

23) Aquae Senanae
AS: Caelius Aurelianus *Chron.* 2.1.48
H: unidentified
B: n/a

24) Aquae Sinuessanae (near Mondragone)
AS: Livy 22.13.10; Martial 6.42.5; 11.82; 11.7; Ovid *Meta.* 15.715; Pliny *HN* 31.4; Plutarch *Marc.* 26.4; Silius Italicus 8.529; Strabo 5.3.6; Suetonius *Tit.* 11; Tacitus *Ann.* 12.66; *Hist.* 1.72
H: general survey of area
B: Arthur 1991, 62.

25) Aquae Stabiae
AS: Pliny *NH* 31.5
H: excavations of extensive luxury villas
B: Di Capua 1929; D'Orsi 1965

26) Aquae Statiellae (Acqui)
AS: Pliny *HN* 3.7.49; 31.2; Strabo 5.1.11
H: limited excavation
B: Mazzini 1922; Carducci 1973

27) Aquae Tauri (outside of Civitavecchia)
AS: Pliny *HN* 3.5.8; Rutilius Namatianus 1.249-276
H: extensive excavations of bath complex
B: Manzi 1869; Mengarelli 1919; 1923; Bastianelli 1933; 1942; 1961; Heinz 1986

28) Aquae Vescinae
AS: n/a
H: extensive excavations of bath building
B: Fulvio 1888; 1896; 1887; Giglioli 1911; Arthur 1991, 58; 105, no. 2;

note: This may be the site of Aquae Vesevinae mentioned only a single time by Caelius Aurelianus in the fifth century. As no location has been satisfactorily identified for Aquae Vesevinae, it seems possible that an error in textual transmission has led to the reading of Vesevinae for Vescinae. Furthermore, the other places of the same passage cited by Caelius Aurelianus are all found in Etruria. It seems likely that Aquae Vesevinae was a later addition by Caelius Aurelianus, inserted into the translated text of Soranus.

29) Aquae Vesevinae
AS: Caelius Aurelianus *Chron.* 2.1.48.
H: n/a
B: Houston 1992, 360.

note: Houston's theory that "somewhere on or near Mount Vesuvius, probably in the period after the eruption of A.D. 79, there was a natural hot spring, large enough to swim in" (Houston 1992, 360) seems rather fanciful. He has surmised a possible date based on the fact that Caelius Aurelianus is generally regarded as a fifth century translation of the second-century medical writing of Soranus. As there are no other accounts of Aquae Vesevinae, I am more inclined to consider that this was a spring which was exploited closer to Caelius Aurelianus' own time. There is also no evidence on which to assess the use of the water, whether it was for bathing or drinking.

30) Aquae Vesicariae
AS: Scribonius Largus 146
H: n/a
B: n/a

31) Aquae Volaterranae
AS: *Tab. Peut.*
H: n/a
B: n/a

32) Araxus
AS: Pliny *HN* 18.29.114; 31.8.
H: n/a
B: n/a

33) Bagni di Stigliano (Aquae Apollinares)
AS: n/a
H: excavation of sanctuary area
B: Staccoli 1983, 205-208; Gasperini 1976

34) Baiae
AS: Ausonius *Mos.* 8.341-348; Celsus 2.17.1; 3.21.6; Cicero *Att.* 1.16; 21.403; *Fam.* 9.2.5; 9.12; *QFr.* 12.10; *Planc.* 65; Dio Cassius 48.51; Florus *Anth. Lat.*, 99; 108; 110; Horace *Ep.* 1.15; Livy 41.16.3; Lucretius 6.747-748; Martial 1.59; 1.62; 3.20; 4.57.5-10; 4.62; 6.43; 11.80 Ovid *Meta.* 15.713; Pliny *HN* 31.2.5; 2.106.227; Plutarch *Marius* 34.2; Propertius 3.18; Regianus *Anth. Lat.* 265; SHA *Hadrian* 25.5-7; *Antoninus Pius* 5.1; Seneca *Ep.* 51.1; *QNat.* 3.24.3; Sidonius Apollinaris 5.14; Strabo 5.4.6; Suetonius *Nero*, 31.3; Tibullus 3.5; Vitruvius 2.6.2
H: extensive excavations of Hillside Complex; limited investigations elsewhere
B: Amalfitano 1990; Borriello and D'Ambrosio 1979; D'Arms 1972; De Angelis d'Ossat 1977, pp. 227-274; *I Campi Flegrei nell'Archeologia e nella storia* 1977; Maiuri 1951, 1969; Paget 1967; Yegül 1996

35) Cicero's Villa
AS: Pliny *HN* 31.6; 31.8
H: n/a
B: n/a

36) Clitumnus
AS: Pliny *Ep.* 8.8; Propertius 2.19.25; 3.22; Statius *Silv.* 1.4.128; Virgil *Georg.* 2.146
H: n/a
B: Grisar

37) Clusian Spring (Chianciano Terme)
AS: Horace *Ep* 1.15; Virgil *Aen.* 10.167
H: current excavations
B: communiciation with David Soren, director

38) Feronia
see 4)

39) Fons Timavi
see 19)

40) Fontes Leucogoei
see 32)

41) Puteoli (Pozzuoli)
AS: Varro *Ling.* 5.25; 9.69; Strabo 5.4.6; Pausanias 4.35.12
H: partial bath complex
B: Sommella

42) Neapolis (Naples)
AS: Strabo 5.4.7
H: n/a
B: n/a

43) Lipari
AS: Diodorus Siculus 5.10; Strabo 6.2.10; Athenaeus 2.42.43; Martial 2.14
H: current excavations
B: Bernabó Brea 1994; Cavalier 1994.

44) Sumbruvium Springs
AS: Celsus 4.12.7
H: unidentified
B: n/a

45) Teanum Sidicinum / *Acidula*

AS: Caelius Aurelianus *Chron.* 5.10.126; Pliny *HN* 31.5; Vitruvius 8.3
H: extensive excavation of bath complex
B: Gabrici 1908

46) Thermae Selinuntiae

see 16)

47) Valchetta Baths

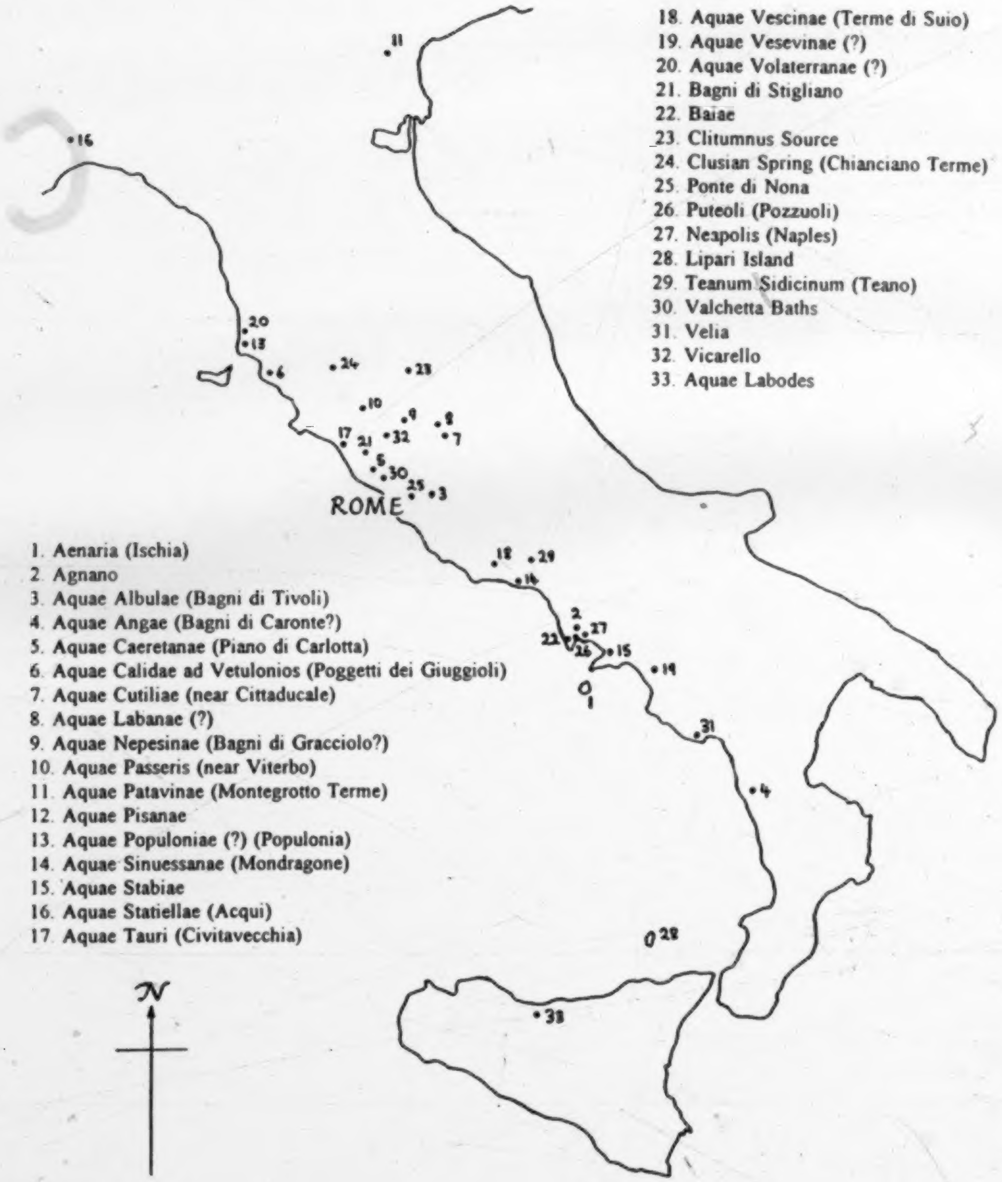
AS: n/a
H: rescue excavation of part of baths
B: Jones 1960

48) Vicarello, possibly Aquae Apollinares

AS: Martial 6.42; *Tab. Peut.*
H: limited excavation bath building, villa, and nymphaeum
B: Colini 1968; 1979; Künzl and Künzl 1992; Masi 1857

Map

Distribution of Spas in Italy



18. Aquae Vescinae (Terme di Suio)
19. Aquae Vesevinae (?)
20. Aquae Volaterranae (?)
21. Bagni di Stigliano
22. Baiae
23. Clitumnus Source
24. Clusian Spring (Chianciano Terme)
25. Ponte di Nona
26. Puteoli (Pozzuoli)
27. Neapolis (Naples)
28. Lipari Island
29. Teanum Sidicinum (Teano)
30. Valchetta Baths
31. Velia
32. Vicarello
33. Aquae Labodes

1. Aenaria (Ischia)
2. Agnano
3. Aquae Albulae (Bagni di Tivoli)
4. Aquae Angae (Bagni di Caronte?)
5. Aquae Caeretanae (Piano di Carlotta)
6. Aquae Calidae ad Vetulonios (Poggetti dei Giuggioli)
7. Aquae Cutiliae (near Cittaducale)
8. Aquae Labanae (?)
9. Aquae Nepesinae (Bagni di Gracciolo?)
10. Aquae Passeris (near Viterbo)
11. Aquae Patavinae (Montegrotto Terme)
12. Aquae Pisanae
13. Aquae Populoniae (?) (Populonia)
14. Aquae Sinuessanae (Mondragone)
15. Aquae Stabiae
16. Aquae Statiellae (Acqui)
17. Aquae Tauri (Civitavecchia)

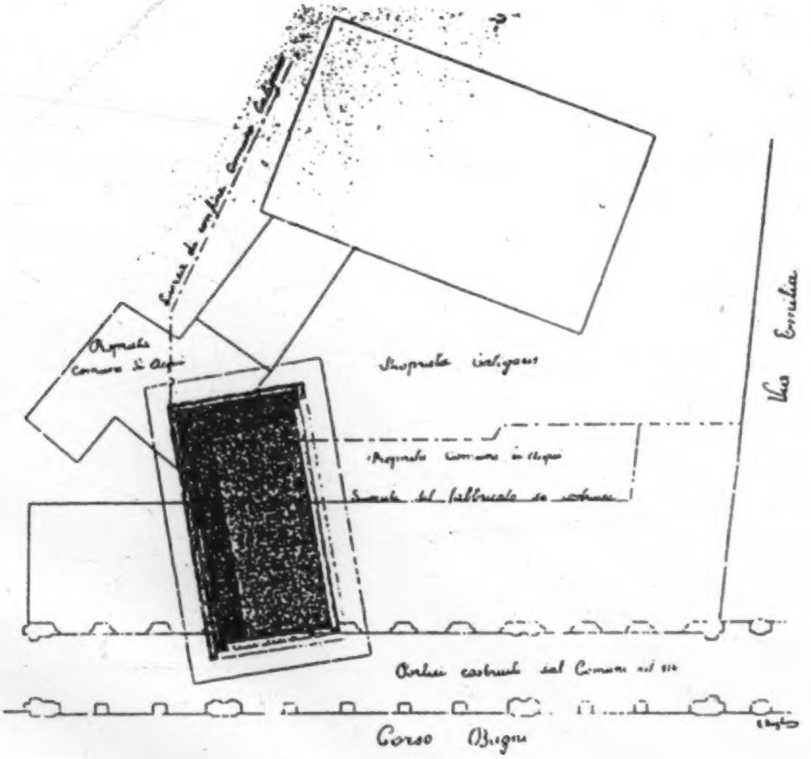


Figure 1

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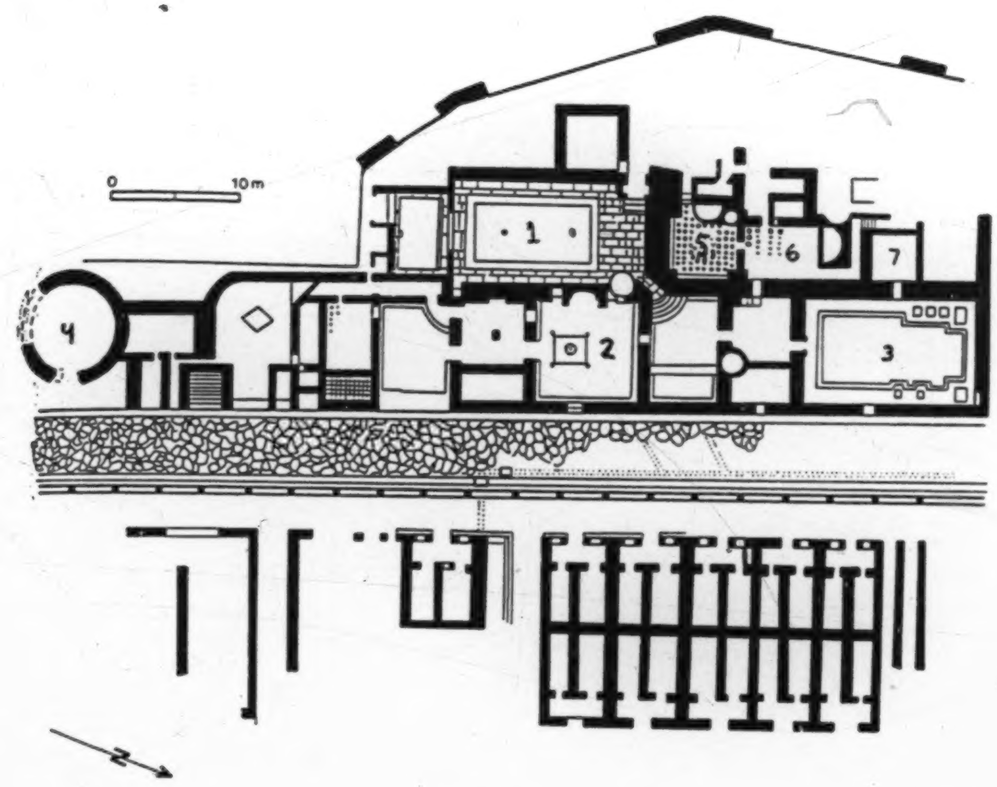

Figure 3

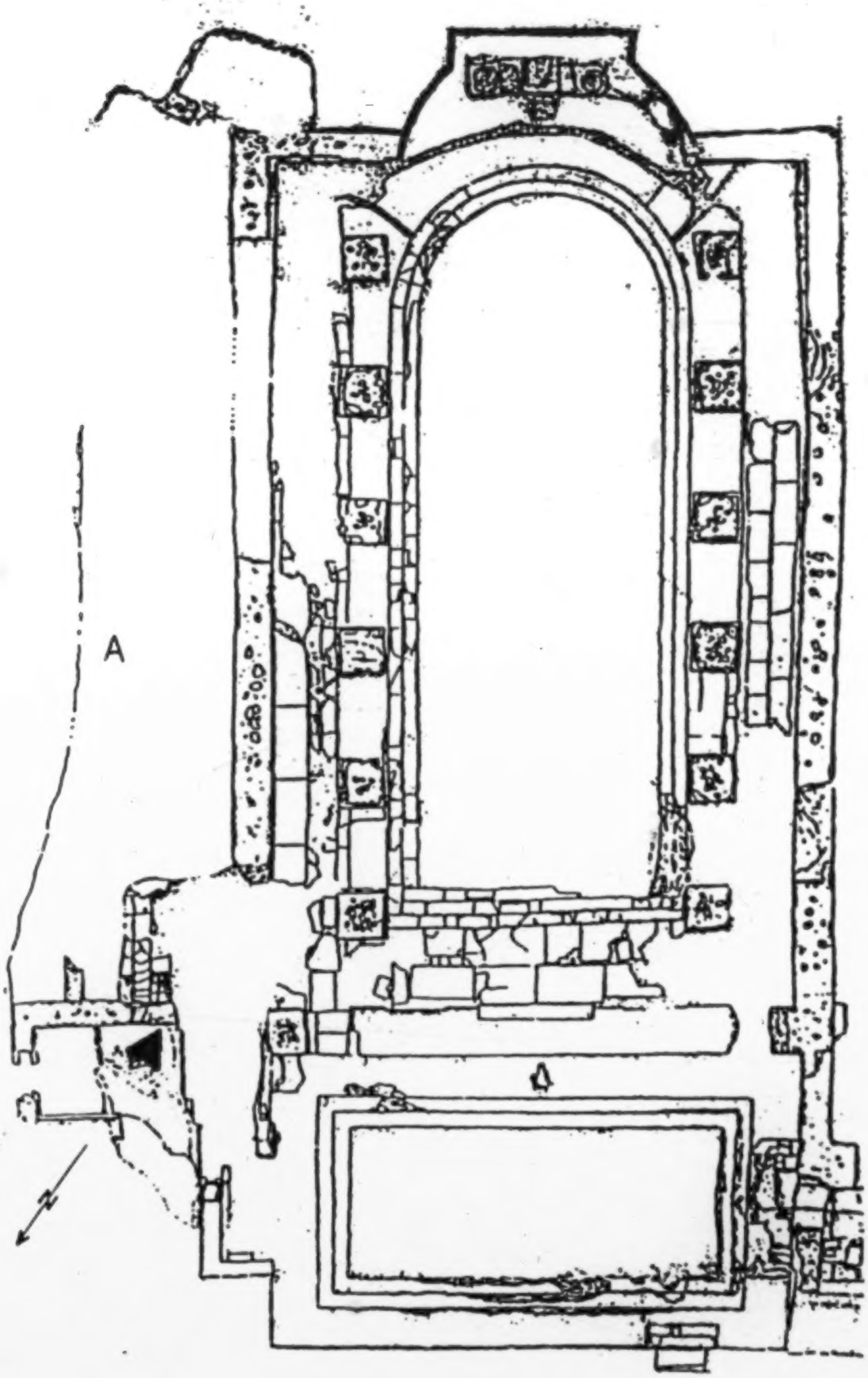

Figure 4

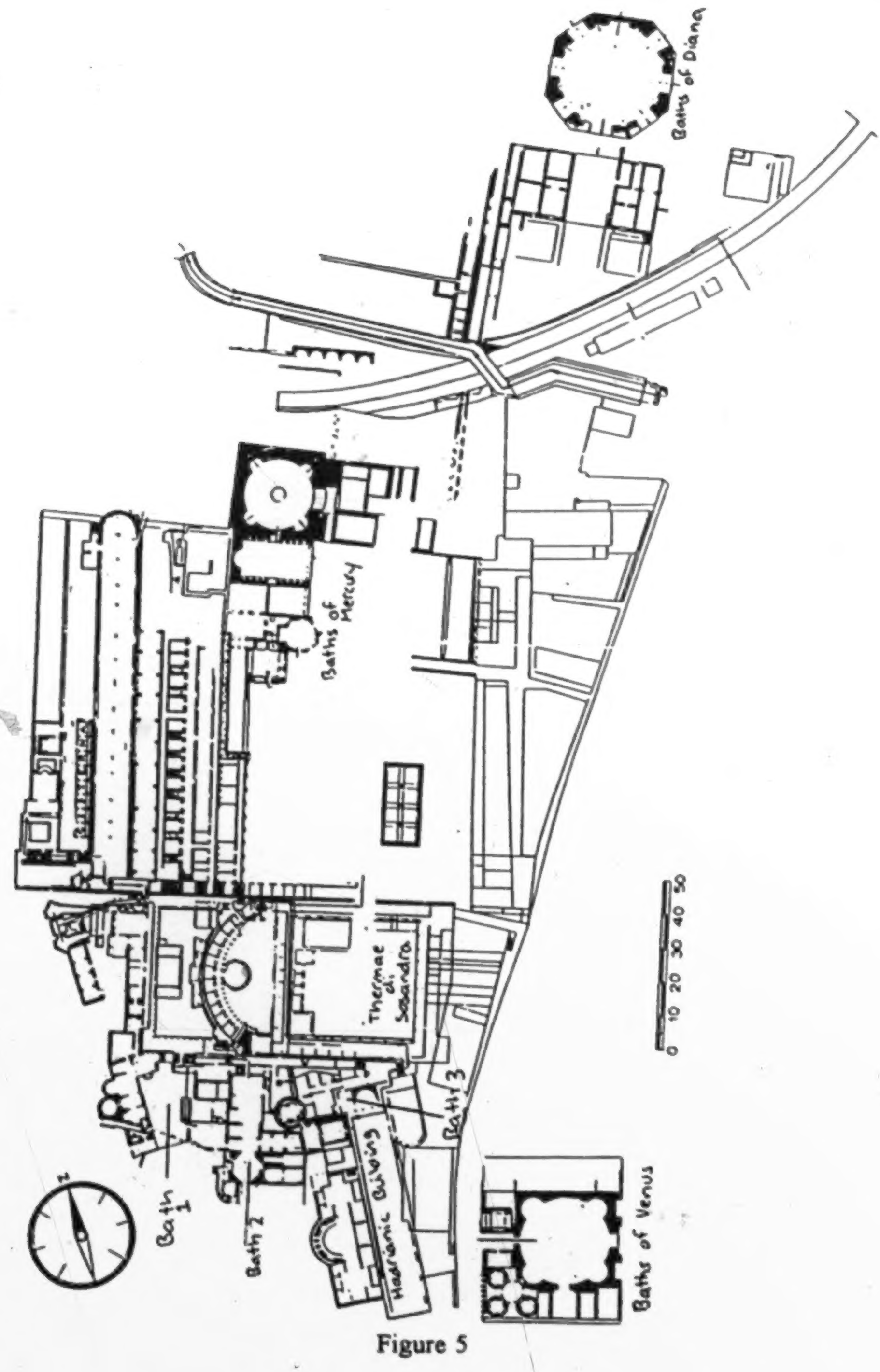
Baths of Diana
Baths of Mercury
Thermae di Sosandra
Bath 1
Bath 2
Bath 3
Hadrianic Building
Baths of Venus
0 10 20 30 40 50
N

Figure 5

Page 219 has been removed due to copyright restrictions. The information removed was Figure 6, plan of the Baths of Mercury at Baiae, and Figure 7, plan of the Baths of Venuse at Baiae, both from Paolo Amalfitano, Giuseppe Camodeca and Maura Medri, eds. *I Campi Flegrei.* Naples, 1990.

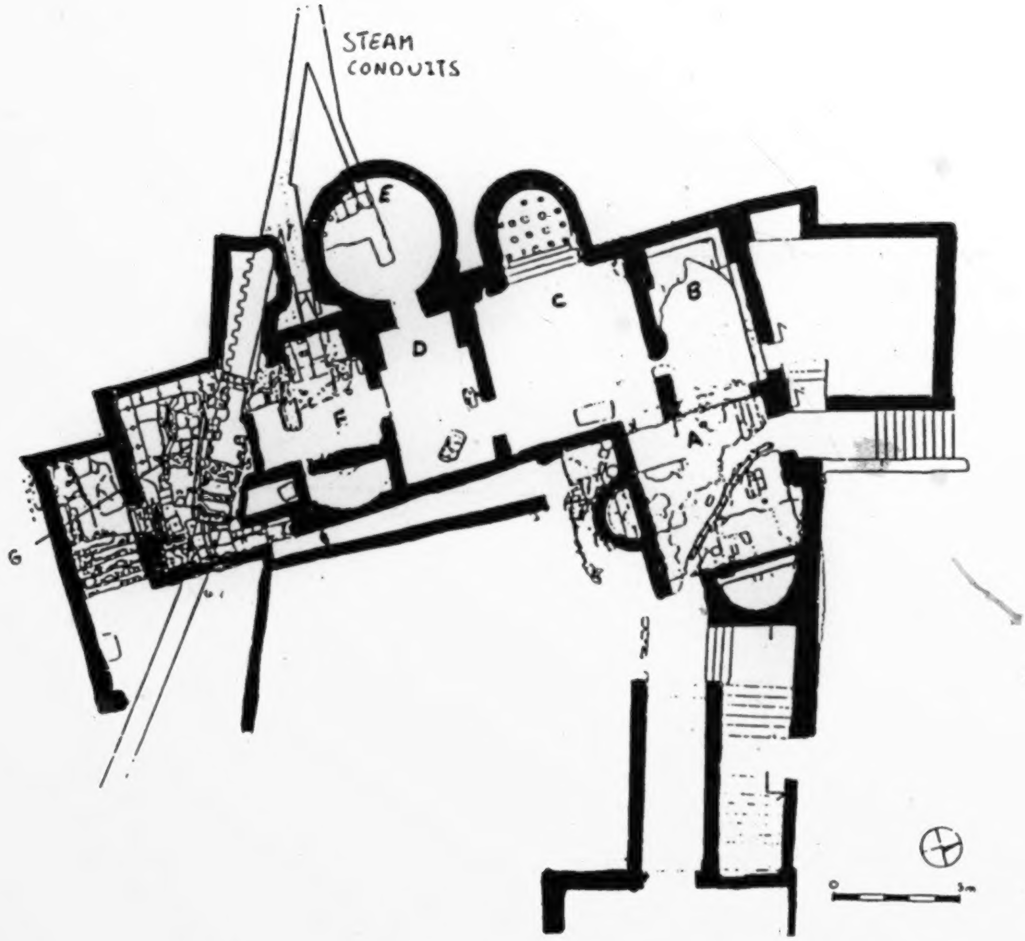

Figure 8

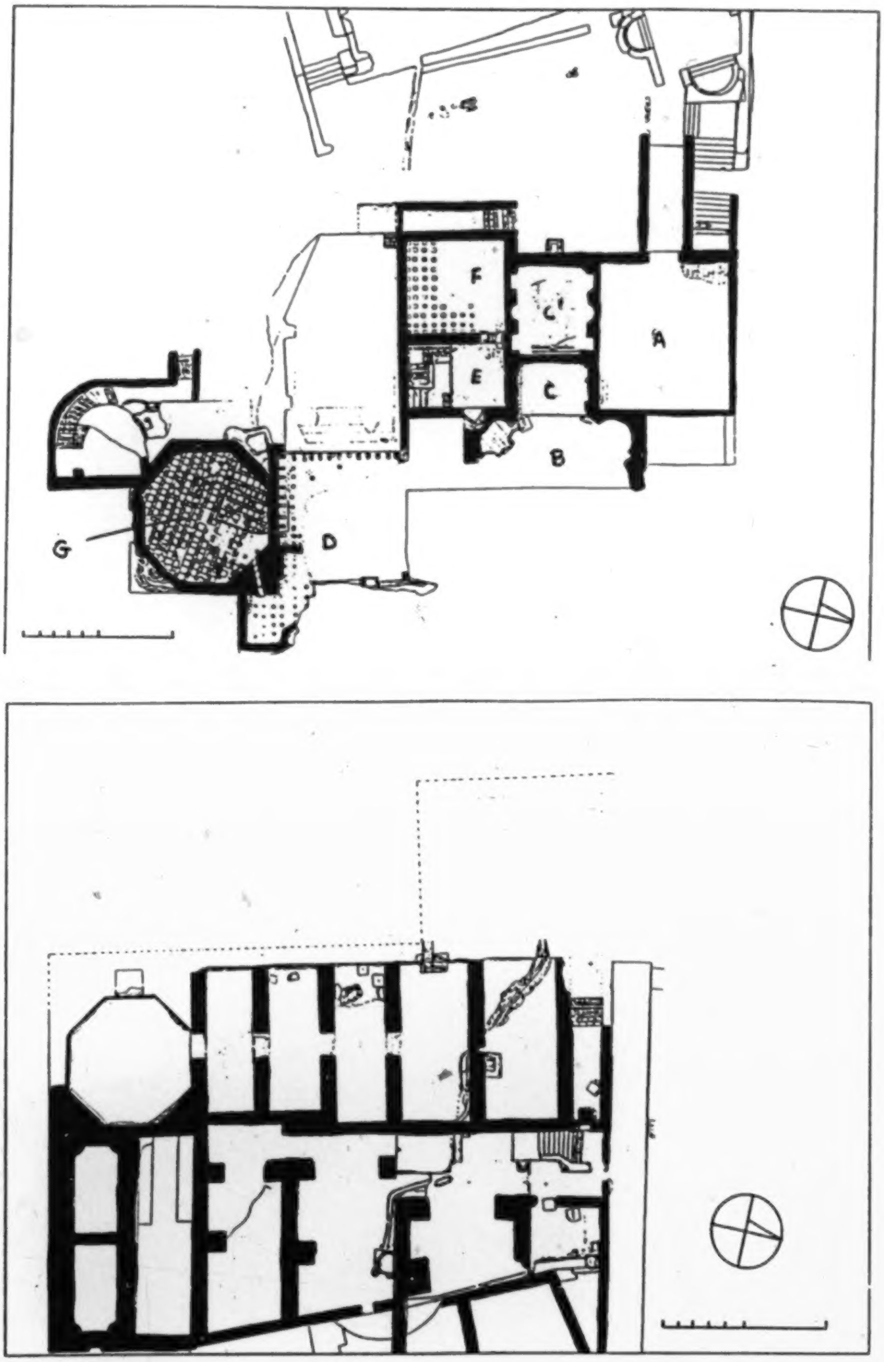

Figure 9

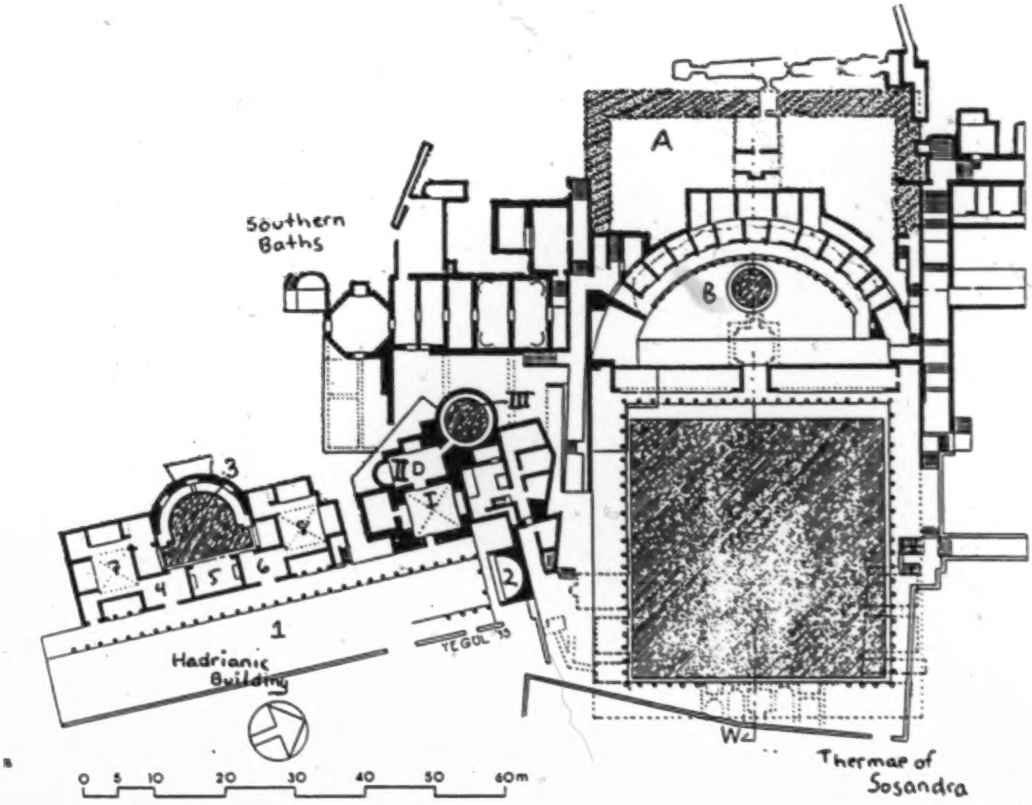
A
Southern Baths
B
III
II D
I
C
3
8
7
4
5
6
2
1
Hadrianic Building
YEGUL '93
W
Thermae of Sosandra
0 5 10 20 30 40 50 60m

Figure 10

Page 223 has been removed due to copyright restrictions. The information removed was Figure 11a, plan of bath complex of Montegrotto Terme, from Luciano Lazzaro, *Fons Aponi. Abano e Montegrotto nell'antichità.* Abano Terme, Padua, 1981, and Figure 11b, drawing of pool fed by "Lastra" spring, from *Delle antiche terme di Montegrotto*, Città di Montegrotto Terme, Soprintendenza Archeologica per il Veneto, April 1997.

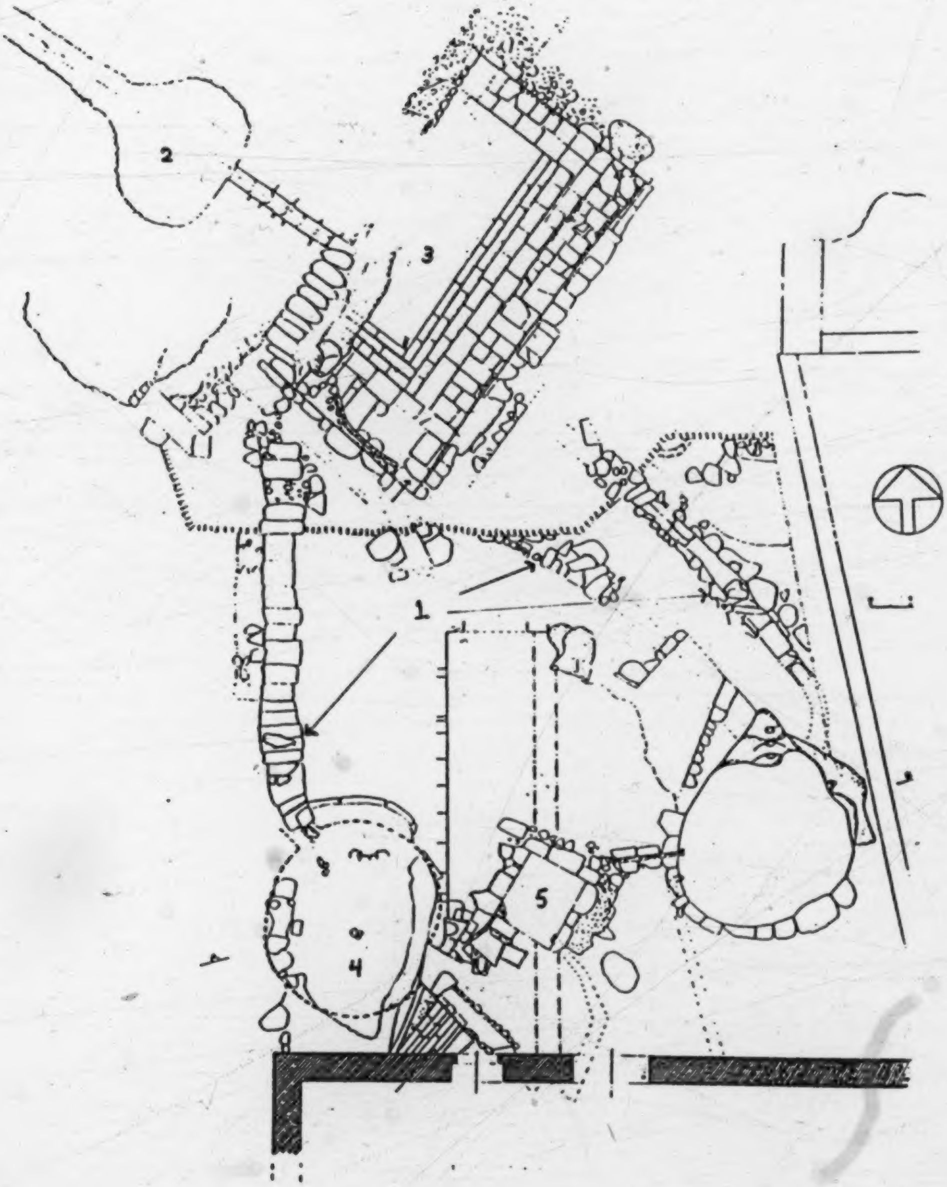

Figure 12

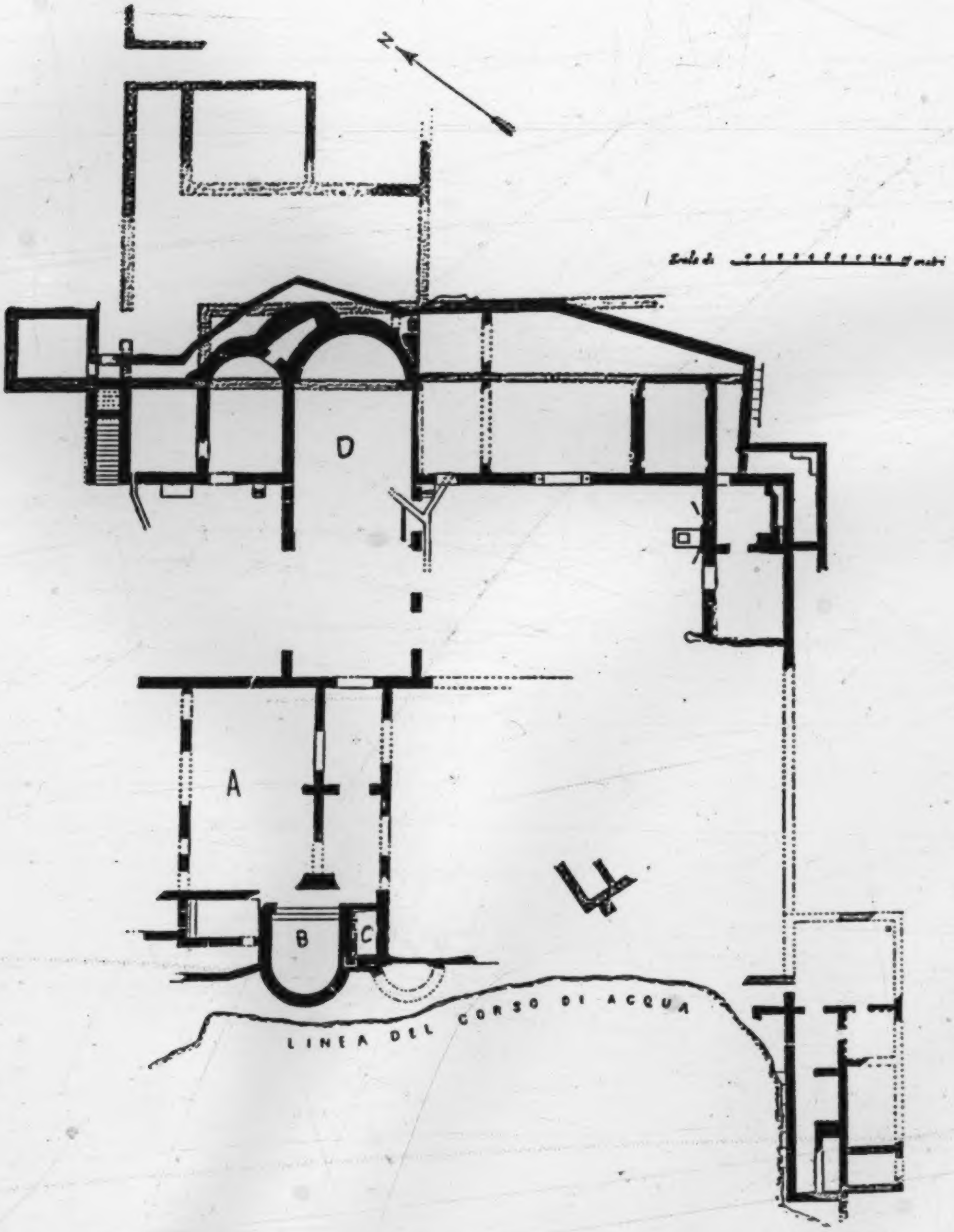

Figure 13

Page 226 has been removed due to copyright restrictions. The information removed was Figure 14, plan of Terme di Cotilia, from G. De Palma, "Terme di Cotilia." *Archeologia Laziale* 7 (1985): 185-192.

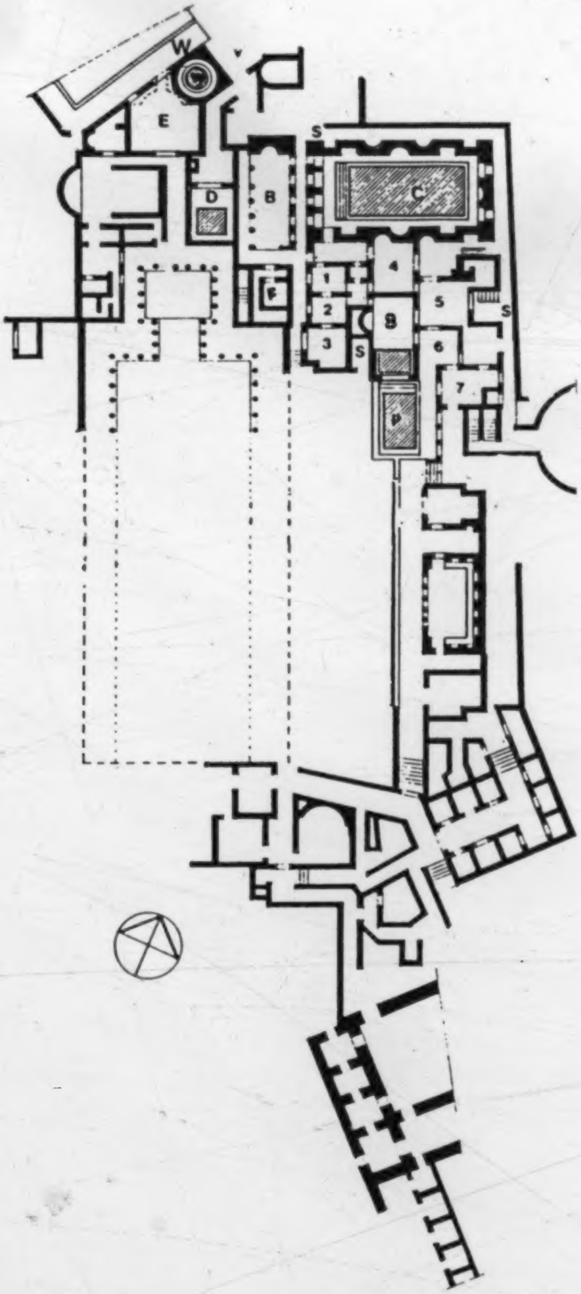

Figure 15

Page 228 has been removed due to copyright restrictions. The information removed was Figure 16, plan of the Valchetta Baths, from G.B.D. Jones, "Veii: the Valchetta Baths ('Bagni della Regina')." *PBSR* 27 (1960): 55-69.

Page 229 has been removed due to copyright restrictions. The information removed was Figure 17, plan of the bath at Aquae Albulae, from Zaccaria Mari, *Forma Italiae. Regio I. Volumen XVII. Tibur Pars Tertia.* Florence, 1983.

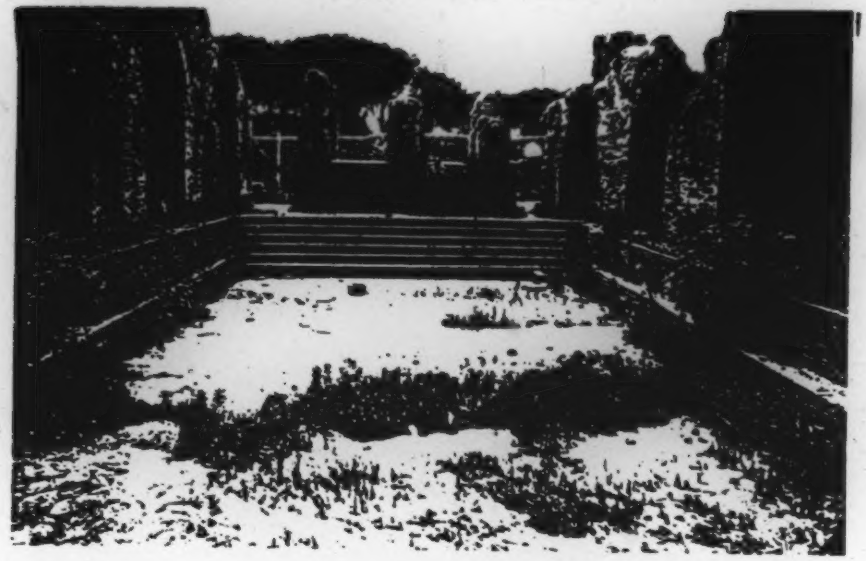

Figure 18

Figure 19

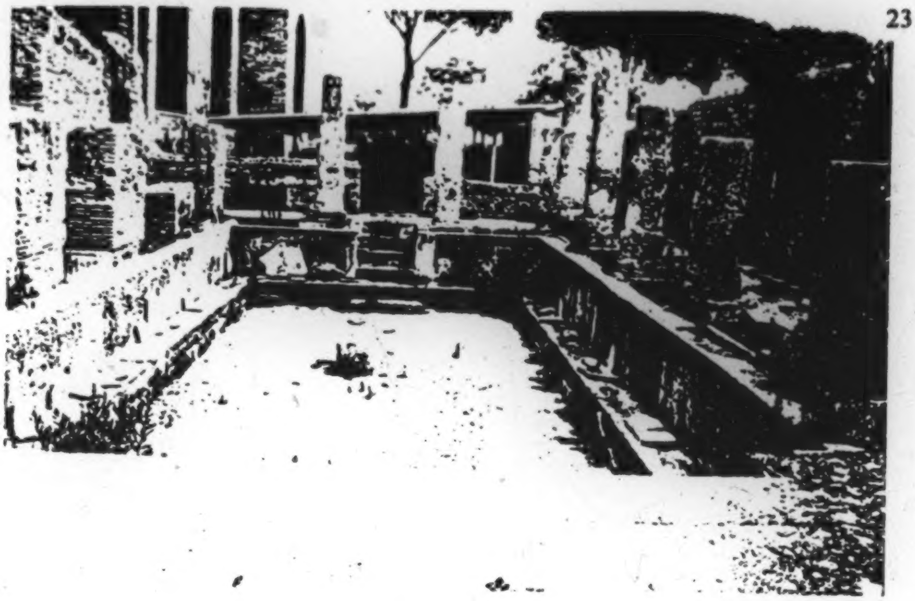

Figure 20

Figure 21

Figure 22

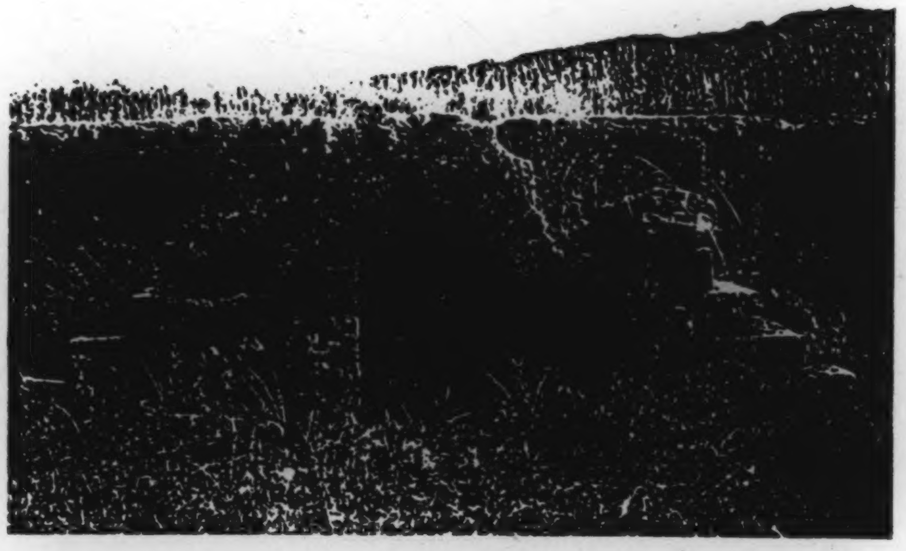

Figure 23

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Page 234 has been removed due to copyright restrictions. The information removed was Figure 26a and Figure 26b, photos of the Peutinger Table, Segments VI and VII, from Luciano Bosio, *La Tabula Peutingeriana*. Rimini, 1983.

Page 235 has been removed due to copyright restrictions. The information removed was Figure 27, the Castro Urdiales cup, from "Waters and Spas in the Classical World." in Roy Porter, ed. *The Medical History of Waters and Spas.* London, 1990. 1-13, and Figure 28, relief from Aenaria, Apollo and the Nymphs, Lidia Forti, "Rilievi dedicati alle ninfe Nitrodi." *RAAN* n.s. 26 (1951): 161-191.

Page 236 has been removed due to copyright restrictions. The information removed was Figure 29a, votive relief from Aenaria, the Dioscuri and the Nymphs, and Figure 29b, votive relief from Aenaria, Apollo and the Nymphs, both from Lidia Forti, "Rilievi dedicati alle ninfe Nitrodi." *RAAN* n.s. 26 (1951): 161-191.

Page 237 has been removed due to copyright restrictions. The information removed was Figure 30, votive relief from Aenaria, Apollo and the Nymphs, and Figure 31, votive relief from Aenaria, Apollo and the Nymphs, both from Lidia Forti, "Rilievi dedicati alle ninfe Nitrodi." *RAAN* n.s. 26 (1951): 161-191.

Page 238 has been removed due to copyright restrictions. The information removed was Figure 32, votive relief from Aenaria, Apollo and the Nymphs, from Lidia Forti, "Rilievi dedicati alle ninfe Nitrodi." *RAAN* n.s. 26 (1951): 161-191, and Figure 33, drawing of silver goblets found at Vicarello, from E. Künzl, and S. Künzl. "Aquae Apollinares/Vicarello (Italien)." in R. Chevallier, ed. *Les eaux thermales et les cultes des eaux.* Turin, 1992, 273-296.

Page 239 has been removed due to copyright restrictions. The information removed was Figure 34, photo of head of Asclepius statue, from A.M Colini, "La stipe delle acque salutari di Vicarello." *Rendiconti della Pontifica Accademia Romana di Archeologia* 60 (1968): 35-56, and Figure 35, drawing of feet of Asclepius statue, from Galliano Migliolaro, *Montegrotto Terme. Notize Storiche.* Padova, 1956.

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Figure 39

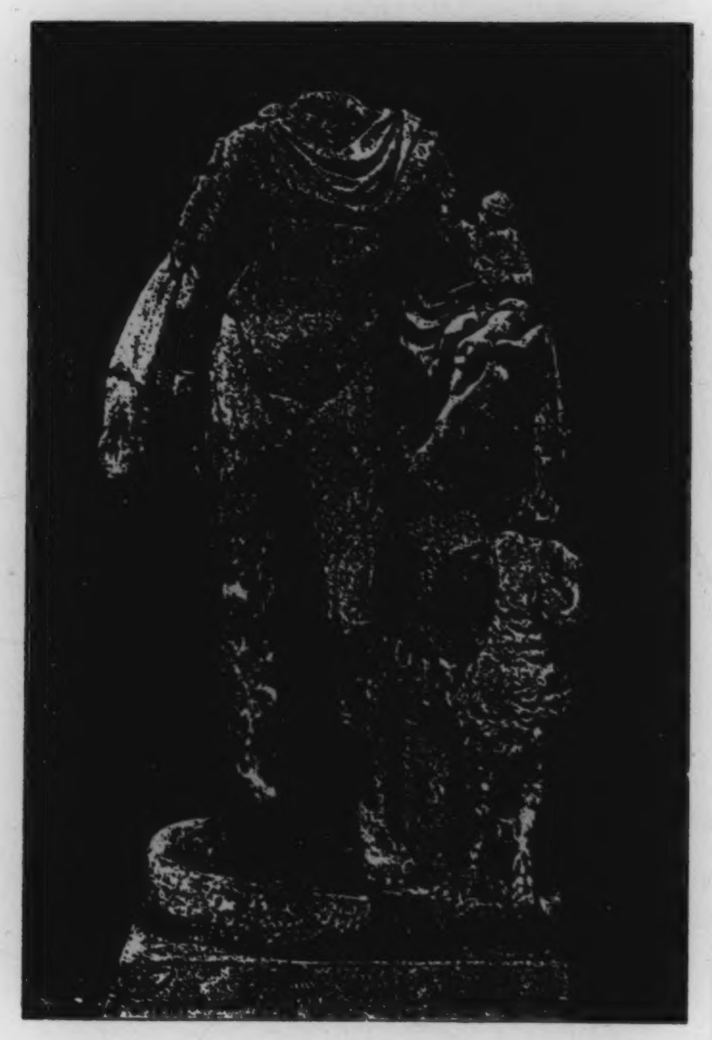

Figure 40

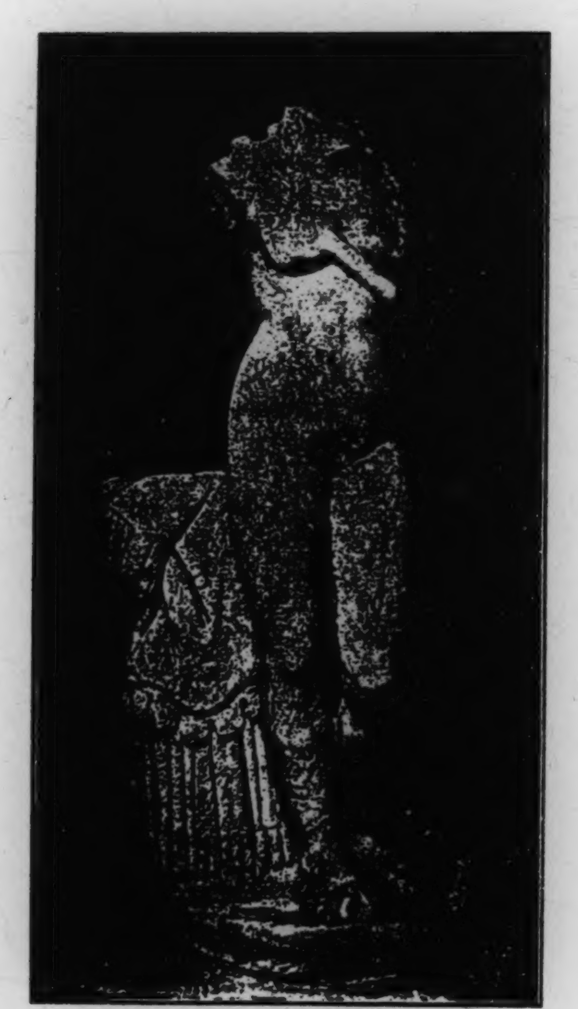

Figure 41

Figure 42

Figure 43

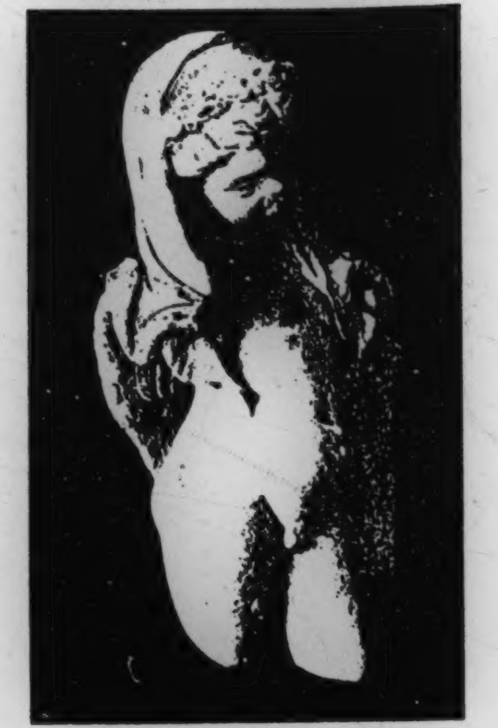

Figure 44

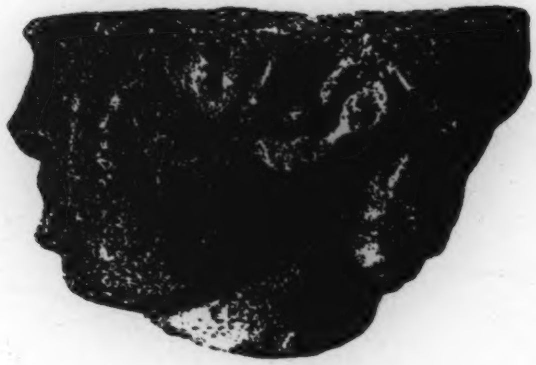

Figure 45

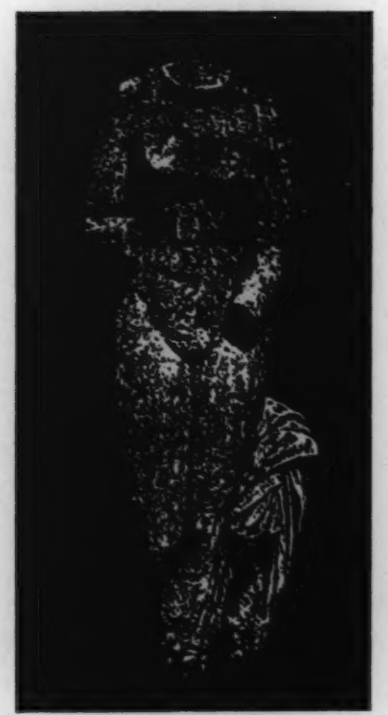

Figure 46

Figure 47

Figure 48

Page 249 has been removed due to copyright restrictions. The information removed was Figure 49, photo of boy strangling goose, Capitoline Museum from J. J. Pollit, Art in the Hellenistic Age. Cambridge, 1984, and Figure 50, photo of statue of Sosandra, Naples Museum, from *Le Collezioni del Museo Nazionale di Napoli.* 1.2, Naples, 1989.

Page 250 has been removed due to copyright restrictions. The information removed was Figure 51, photo of statue head of Apollo, Naples Museum, from *Le Collezioni del Museo Nazionale di Napoli.* 1.2, Naples, 1989, and Figure 52, photo of nymph statue head found at Terme Taurine, from S. Bastianelli, "Civitavecchia. Scavi eseguiti nelle Terme Taurine o Traiane." *NSc* 9 (1933): 398-421.

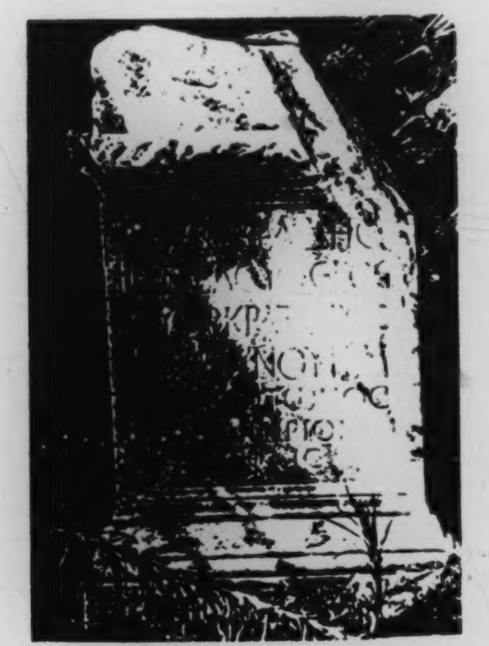

Figure 53

Figure 54

Page 252 has been removed due to copyright restrictions. The information removed was Figure 55, drawings of flasks with scenes of Baiae, from K. Painter, "Roman Flasks with Scenes of Baiae and Puteoli." *Journal of Glass Studies* 17 (1975): 54-67.

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Appendix 1
Inscriptions from or about Spas

Site	Source	Vol. or Year	Number or Page	Inscription Text
Aenaria	*IG* Forti	14 1951	892 no. 5	Μ[έ]νιππος ἰατρὸς ὑπαλπῖνος νύμφαις Νιτρώδεσι καὶ Ἀπόλλωνι ε[ὐ]χὴν ἀνέθηκεν
Aenaria	*CIL* Forti *ILS*	10 1951	6786 no. 6 3874	Apollini et Nymphis Nitrodibus | C(aius) Metilius Alcimus v(otum) s(olvit) l(ibens) a(nimo)
Aenaria	*CIL* Forti *ILS*	10 1951	6787 no. 2 3873	Argenne Poppaeae Augustae Augusti liberta | Apollini et Nymphis votum l(ibens) d(edit)
Aenaria	*CIL* Forti	10 1951	6788 no. 8	Voto suscepto | Apollini et Nymphis | M(arcus) Verrius Craterus solvit
Aenaria	*CIL* Forti *ILS*	10 1951	6789 no. 9 3875	[Ful]vius Leitus Nymphis Nitrodis | vot(um) sol(vit) l(ibens) ani(mo)
Aenaria	*CIL*	10	6790	Folia Herois Nymphis | Nitrodiaes d(onum) d(edit) curavit M V D | Diomedes {MVD : uncertain}
Aenaria	*CIL*	10	6791	A(ulus) Avianius Cilo | Lymphis v(otum) s(olvit) l(ibens) m(erito)
Aenaria	*CIL* Forti	10 1951	6792 no. 11	Aur(elius) Mon|nus c|um suis Num(erius) Fab|us d(onum) d(ederunt) cu|m suis a|lumnis
Aenaria	*CIL* Forti	10 1951	6793 no. 3	Capellina v(otum) s(olvit) l(ibens) Nymphis

Aenaria	*CIL*	10	6794	P(ublius) Dasimius Risea Nymphis v(otum) s(olvit)
Aenaria	*CIL*	10	6795	Sex(tus) Fabius C(ai) f(ilius) Vol(tinia tribu) Gemellus Nym(phis)
Aenaria	*CIL* Forti	10 1951	6796 no. 10	Lymphis v(otum) s(olvit) l(ibens) m(erito) | M(arcus) Octavius Alexander
Aenaria	*CIL* Forti *ILS*	10 1951	6797 p. 186 3858	L(ucius) Rantius L(uci) f(ilius) Tro(mentina tribu) Lumphieis | Λεύκιος Ῥάντιος Λευκίου υἱὸς Νύμφαις
Aenaria	*CIL* Forti	10 1951	6798 no. 7	T(itus) Turranius Dionusius | Numphis donun dedit (*sic*)
Aenaria	*CIL* Forti	10 1951	6799 no. 4	[voto s]uscepto | N]ymphabus | r]is l(ibens) a(nimo) d(onum) d(edit)
Aquae Albulae	*CIL* *ILS*	14	3534 6227	Attini Aug | sac(rum) | C(aius) Iulius Sp(uri) f(ilius) Iulianus | Proculus Sacerdos | M(atri) d(eum) m(agnae) Id(aeae) | ad Aquas Albulas | d(onum) d(edit)
Aquae Albulae	*CIL* *Inscr. Ital.*	14	3908 593	[Aquis A]lbulis d(onum) d(edit) | C]eladus Aug(usti) l(ibertus)
Aquae Albulae	*CIL* *ILS* *Inscr. Ital.*	14	3909 3892 595	Aquis Albulis | sanctissimis | Ulpia Athenais | Glypti Aug(usti) | lib(erti) ab epistu|lis uxor | libens | d(onum) d(edit)
Aquae Albulae	*CIL* *Inscr. Ital.*	14	3910 594	Aquis Albulis sa[c(rum)] | C(aius) Umbreius Lavican[us] | pro sal(ute) s(ua) v(otum) l(ibens) s(olvit) m(erito)
Aquae Albulae	*CIL* *Inscr. Ital.*	14	3912 600	C(aius) Claudius | Ti(iberii) f(ilius) Quir(ina) | Severus | Tr[...]v[..]v[| Albul[...]a[| Sex[

Aquae Albulae	*Inscr. Ital.*		591	Albulae ex vot(o) suscept(o) [Her]mes Marm(ii) l(ibertus)
Aquae Albulae	*Inscr. Ital.*		592	Albulae Isidi Deanam Cossorius Italus d(onum) d(edit)
Aquae Aponi	*CIL*	1	2172	Sei qui minus rem reliquit | liberei sibei quaerant | tu viator vale ad aquas | sunt spissa |ROO Q(uintus) Marcius P(ublii) f(ilius) Ser(gia) Rex
Aquae Aponi	*CIL* Lazzaro	5 1981	2782 p. 151	Adeptus | Apollini | v(otum) s(olvit) l(ibens) m(erito)
Aquae Aponi	*CIL* *ILS* Lazzaro	5 1981	2783 3894 p. 152	C(aius) Acutius | C(ai) f(ilius) Maturus | A(quis) A(poni) v(otum) s(olvit) l(ibens) m(erito)
Aquae Aponi	*CIL* *ILS* Lazzaro	5	2784 3894a p. 153	C(aius) Cassius | Severus | missus ex pr(aetorio) | speculator | A(quis) A(poni) v(otum) s(olvit) l(ibens) m(erito)
Aquae Aponi	*CIL* *ILS* Lazzaro	5 1981	2785 6694 p. 154	A(quis) A(poni) | C(aius) Cluentius C(ai) f(ilius) | Romul(ia tribu) Proculus | Ateste aedilis (duum)vir quaestor | aerari bis pontifex v(otum) s(olvit)
Aquae Aponi	*CIL* Lazzaro	5 1981	2786 p. 156	A(ulus) Iunius | Macrinor(um) l(ibertus) | Nigellus | A(quis) A(poni) v(otum) s(olvit) l(ibens) m(erito)
Aquae Aponi	*CIL* *ILS* Lazzaro	5 1981	2787 5202 p. 158	Q(uintus) Magurius Q(uinti) f(ilius) Fab(ia) | Ferox | lus(or) epidixib(us) et cetaes I II III in | greg(e) Veturian(a) quae et Iuni|orum A(quis) A(poni) dicavit euras VIII | et pertic(am) uncinor(um) XII n. CCLIX

Aquae Aponi	*CIL* Lazzaro	5 1981	2788 p. 163	M(arcus) Terentius | M(arci) l(ibertus) Secundus | A(quis) A(poni) v(otum) s(olvit) l(ibens) m(erito)
Aquae Aponi	*CIL* Lazzaro	5 1981	2789 p. 165	C(aius) [T]itius C(ai) f(ilius) C[| A(quis) A(poni) v(otum) s(olvit) l(ibens) m(erito)
Aquae Aponi	*CIL* Lazzaro	5 1981	2790 p. 165	A(quis) A(poni) | C(aius) Trebius | C(ai) f(ilius) | Firmus | cum dono | v(otum) s(olvit) l(ibens) m(erito)
Aquae Aponi	*CIL* Lazzaro	5 1981	2792 p. 166	Velleia P(ubli) f(ilia) | Chreste | F(onti *vel* -ortunae) v(otum) s(olvit) l(ibens) m(erito)
Aquae Aponi	*CIL* Lazzaro	5 1981	3101 p. 204	A(quis) A(poni) | ministros | L(ucius) Saufeius C(ai) f(ilius) Sca(ptia tribu) | voto
Aquae Aponi	*CIL* Lazzaro	5 1981	8117.9 p. 215	Arriae Fadillae
Aquae Aponi	*CIL* Lazzaro	5 1981	8117.10 p.216-217	C(aius) Lollius Gratus | Patavi facit
Aquae Aponi	*CIL* Lazzaro	5 1981	8990 p. 157	Q(uintus) Fabiu[s] | Nicephor[us] | A(quis) A(poni) [v(otum) s(olvit) l(ibens) m(erito)]
Aquae Aponi	Lazzaro	1981	p. 161	] | L(ucius) Octavi|us L(uci) l(ibertus) | Hilario | [
Aquae Aponi	Lazzaro	1981	p. 163	L(ucius) Pactum[e]ius | Ferox mil(es) leg(ionis) XIII[I] | A(quis) A(poni) l(ibens) m(erito) v(otum) veteran(us) [s]olvit
Aquae Aponi (found at Verona)	Lazzaro	1981	p. 203	Apono
Aquae Caeretanae	Colonna	1972	442	L(ucius) Gavillius L(ucii) l(ibertus) Aescinus

Aquae Caeretanae	Cosentino & Sabbatini Tumolesi *AE*	1989 1989	107-110 305	Iovi Font[i] | Aq[uar(um) Caeretanar(um)] | Florentinus Aug(usti servus) | d(ono) d(edit)
Aquae Caeretanae	Cosentino & Sabbatini Tumolesi *AE*	1989 1989	110-112 306	L(ucius) Pontilius L(ucii) f(ilius) Duurus signif[er...|.]OV[...] R[.]V TI Fonti Aq[uar(um) Caeretanar(um)]
Aquae Caeretanae	*AE*	1989	307	D(is) M(anibus) | Diodoto | Tauri fil(io) | medico | Tyanensi ex | Cappadocia, | Charinus | alumnus b(ene) merenti fecit
Aquae Caeretanae (found at Amelia, Perugia)	Sabbatini Tumolesi *AE*	1992 1992	80f. 599	Iovi | et Herculi | Aquar(um) Caeret(anarum) | votum solvit | P(ublius) Scribonius | Proculus (centurio) coh(ortis) | VI vig(ilum) ob merit(o)
Aquae Pisanae	*CIL*	11	1418	iu]s M(arci) l(ibertus) Eros Aqu[|]rum aediclam *(Nissen supplies:* aqu[arum Pisana]rum aediclam [d(e) s(uo) f(aciendam) c(uravit)]
Aquae Sinuessanae	*CIL* *ILS*	10	4734 3868	Nymphis sanct(is) novis repertis | in villam Surdinianam Amempti | Caes(aris) l(iberti) et Orciviae Phoebes et Rhodini lib(erti) | eorum deduct(is) ad eam villam quae et ipsae | maiestati suae se dederunt | Imp(eratore) Caesare Vespasiano III M(arco) Cocceio Nerva co(n)s(ulibus)
Aquae Sinuessanae (found at Lambaesis)	*CIL* *ILS*	8	2583 3893	[Aquis Sin]uessanis ob[ ] |]i T(itus) Caunius Pris[cus]| leg(atus) Aug(usti) pr(o)] pr(aetore) co(n)s(ul) des(ignatus) cum v[era | uxore et Fir]mino et Prisca filiis

Aquae Statiellae (found at Caesaraugusta, Tarraconensis)	*CIL*	2	2993	Q(uinto) Vettio M(arci) f(ilio) Ama[bili] Trom(entina) | Aqui[s St]atie[lli]s | [h]eredes ex testamento
Aquae Statiellae (found at Burnum, Dalmatia)	*CIL*	3	2833	L(ucius) Cassius L(ucii) f(ilius) | Trom(entina) Marti|alis Aq(uis) Sta(tiellis) | mil(es) leg(ionis) XI | C(laudiae) p(iae) f(idelis) | > P(ublius) Vlpi(us) d(onum) f(ecit) Sil(vano) | vestris | stip(endia) XII an(no) XXXV | t(estamento) f(ieri) i(ussit) h(eres) f(aciundum) c(uravit)
Aquae Statiellae	*CIL* *AE*	5 1987	7505 404	Genio | p(atroni) n(ostri) | Thallus | Thallio | Agathio | lib(erti)
Aquae Statiellae	*AE* *CIL*	1991 5	726 7423	Mercurio | Aug(usto) | Q(uintus) Salvius | Germanius | v(otum) s(olvit) l(ibens) m(erito)
Aquae Tauri	Mengarelli *SEG*	1923 2	343 529	Ἀλκιβιάδης | ἀπελεύθερος | Αὐτοκράτορος | Ἀδριανοῦ καὶ | ἐπὶ κοιτῶνος | χαριστήριον | Νύμφαις
Aquae Vescinae	*AE* Giglioli	1914 1911	217 49-50	[Pro] salute et victoriae et redi|tus dominorum N~~[]~~. Aug ~~[(usti)]~~ | Antonini et ~~Getae~~ invictissimo | et Iuliae Augustae matris Augustor(um) et castr|rum Genio Aquarum Vescinarum | Antonius et Eugenes servi | dispensatores posuerunt

Aquae Vescinae	*AE*	1982	153	Imp(erator) Caes(ar) L(ucius) Septim(ius) | Severus Pius Pertin(ax) | Aug(ustus) Arab(icus) Adiab(enicus) | Parthic(us) max(imus) et | Imp(erator) Caes(ar) M(arcus) Aurel(ius) | Antoninus Aug(ustus) | pius felix | ~~et P(ublius) Septim(ius) Geta nobilissimus Caes(ar)~~ | viam quae ducit a | Minturnis ad | Aquas Vescinas | sua peq(unia) straver(unt)
Aquae Vescinae	*AE*	1989	145	Imp(erator) Caes(ar) L(ucius) Septim(ius) | Seuerus Pius Pertinax | Aug(ustus) Arab(icus) Adiab(enicus) | Parthic(us) max(imus) et | Imp(erator) Caesar M(arcus) Aurel(ius) | Antoninus Aug(ustus) | Pius Felix [[...|...|...|...]] | via quae ducit a | Min[turnis ad Aquas Vescinas]
Aquae Vescinae	*AE* Arthur	1989 1991	144 105, no.2	Imp(erator) Caes(ar) L (ucius) Septim(ius) | Severus Pius Pertin(ax) | Aug(ustus) Arab(icus) Adiab(enicus) | Parthic(us) Max(imus) et | Imp(erator) Caes(ar) M(arcus) Aurel(ius) | Antoninus Aug(ustus) | Pius Felix \\\\\\\\\\\\\\\\\\\\\\\\\\\\Via quae ducit a | Minturnis ad Aquas Vescinas | sua peq(unia) straver(erunt)
Aquae Vescinae	Giglioli	1911	49	Ἡγείας παῖσιν φιλαδέλφοις

Bagni di Stigliano	*AE*	1964	97	.... | Bovis ------ VV | sacr(um) huius loci | d(onum) d(edit) (*reading very uncertain, possibly indicated name of dedicants and Genius*)
Bagni di Stigliano	Gasperini	1988	35, no.27	Apollini sancto sacrum | Eros Aug(usti) lib(ertus) proc(urator)
Vicarello	*CIL*	11	3285	Apollini sancto Cl(audius) Severianus d(onum) d(edit)
Vicarello	*CIL* Colini *ILS*	11 1979	3286 18-19 3876	Apollini et Nymphis Domitianis | Q(uintus) Cassius Ianuarius d(onum) d(edit)
Vicarello	*CIL* *ILS*	11	3287 3876a	Apollini sancto et Nymphis voto suscep|to Gavia Rhodine d(onum) d(edit) calicem argenteum p(ro) s(alute)
Vicarello	*CIL*	11	3288	Apollini et | Nymphis | sanctis | Naevia Bassilla d(onum) d(edit)
Vicarello	*CIL* *ILS*	11	3289 3877	Apollini Silvano Nymphis Q(uintus) Licinius Nepos d(onum) d(edit)
Vicarello	*CIL*	11	3290	Nymphabus Minucia Zosime d(onum) d(edit)
Vicarello	*CIL*	11	3291	C F H d(onum) d(edit) *(reading of C F H uncertain)*
Vicarello	*CIL*	11	3292	Mem(oriae) Furiae Asclepiadis
Vicarello	*CIL*	11	3293	Q(uintus) Murdius
Vicarello	*CIL*	11	3294	Apollini Silvano | Asclepio Nymphis | sacrum | [L]aiatius Phoebus | Decurialis Decuriae Iuliae | Praeconiae consularis | voto suscepto d(onum) d(edit) con | Phoebiano filio

Appendix 2

Spas on the Peutinger Table

The Peutinger Table includes a great number of spas, many of which are known from literary evidence and others which are known only from the map itself (fig. 24-26). There are a number of spas on the Table which are known from literary sources of the Early Empire. Vitruvius devotes an entire chapter to the effects of thermal-mineral springs and mentions five places in Italy that were developed as spas. Four of these are shown on the Peutinger Table; only one, Aquae Cutiliae, is depicted clearly as a spa. The others are indicated merely as towns. Strabo describes the benefits of nine spas. Of these, three are shown on the map: Aquae Statiellae, Aquae Cutiliae, and Aquae Albulae. The last does not have a typical spa symbol which may be the result of minimal space available in the vicinity of Rome. Pliny the Elder records over a dozen places in Italy where thermal-mineral springs could be used; again, only a few are found on the Peutinger Table. In the fifth century, Caelius Aurelianus, the transmitter of Soranus, recommends ten different spas. Because Soranus himself did not name any specific spas, it can be inferred that those in the translation are an addition. Nearly all of the places Caelius Aurelianus describes are on the Peutinger Table, although, once again, only Aquae Cutiliae is clearly marked as a spa. Other late sources mention spas which appear on the Map, including Aquae Tauri, described by Rutilius Namatianus, and Aquae Aponi, recounted by Claudian and Cassiodorus.

There is no simple explanation for why some spas are included on the Peutinger Table and others are not. This is in part due to the fact that the Map is a late compilation of information which seems to have an origin in Augustan period. Yet, there are some patterns to the presence of spas. First, spas which were already reputable by the end of first century A.D. and which continued to be well-known into the fourth century, as suggested by their presence in the literary record, are present on the Map. These include Aquae Cutiliae and Aquae Statiellae. Aquae Albulae also may be included in this group, Secondly, spas which were important in the Early Empire, but which later became less important probably were shown on the original first century version. In the later map, they were not considered significant enough to warrant using a spa symbol and, instead, sometimes only an associated place-name was included. This seems to be the case for Aquae Sinuessanae, Teanum Sidicinum, and Aquae Caeretanae. The island of Aenaria is omitted. Surprisingly, Baiae is not shown with bath buildings, but, instead, has what seem to be luxury villas, thus confirming its primary reputation as a pleaure resort rather than a healing spa. A third group of spas consists of those which were developed during and after the second century. These include Aquae Tauri and Aquae Apollinares. Both continued to be active through Late Antiquity and because of this, exist on the Map. Finally, there are many spas which are known only from the Peutinger Table. In some cases, the name is given on the Map, but in several others, no name is provided. The only record of Aquae Angae, Aquae Populoniae, and Aquae Volaternae is that from the Map. It appears that there were many more spa establishments than the literary evidence attests.

n.b. The following lists occurrences of the spa symbol in Italy. I have indicated the name shown on the Peutinger Table, the segment in which it is found, its relative position, and the distance given between locations. Places which are known only from the Peutinger Table are underlined. The second list identifies those symbols and places which have generally been included with the spas, but which in fact illustrate luxury or imperial villas. Although the general design of the building symbol is similar, it would seem that in fact a symbol showing a closed space represents a different type of building. Given that one of them is labelled *Pretorium* (for *praetorium*), it seems likely that these are actually country estates or villas. This supposition is confirmed by the symbols used for both Oplontis and Baiae, places which were certainly known for their villas.

Symbols which show spas:

Name	*Seg.*	*Placement*	*Distances*
1. Aquis Tatelis	III.4	on route	27 to Berlona
2. ad taberna frigida	IV.1	end of road	10 to Lunges
3. Aquas Volaternas	IV.2	end of road	
4. Aquae Populanie	IV.2	on route	7 to Maniliana, 33 to Ad Sextum
5. Fonte Timavi	IV.5	end of road	14 to Tergeste
6. Aquas Passaris	V.1	on route	9 to Volsinis, 11 to Forum Casi
7. Mindo fl.	V.2	end of road	beyond Gravisca
8. Aquas tauri	V.3	end of road	12 to Lacus et Mons Ciminus
9. Aquas Apollinaris	V.3	on route	12 to Tarquinis, 8 to Turres
10. Aque Cutillie	V.4	on route	7 to Interverio, 9 to Reate
11. Tres Tabernas	VI.1	on route	beyond Sublanuvio (no distance given)
12. [near Terracina]	VI.2	on route	10 to Tres Tabernas
13. Adnonum	VI.3	on route	6 to Urbanis, 6 to Casilino
14. Aque Ange	VII.1	end of road	8 to Annicia
15. [-]	VII.2	end of road	12 to Arciade
16. Aquae Labodes	VII.1	on route	45 to Lilybeo, 40 to Agrigento

Symbols which show villas:

Name	*Seg.*	*Placement*	*Distances*
1. Vacanas	V.3	end of road	12 to Sutrio
2. Pretorium Lauerianum Nucerie Apule	VI.3	on route	9 to Arpos
3. [Baiae]	VI.3	end of road	3 to Cumas
4. Invinias	VI.3	end of road	3 to Literno
5. Syllas	VI.3	on route	6 to Telesie
6. Oplont[i]s	VI.5	on route	6 to Herclanum, 3 to Pompeis
7. ad Teglanum	VI.5	on route	5 to Hola, 8 to Nuceria

Appendix 3

Analysis of the Belief in the Power of Sulphur Springs

Sulphur springs were perhaps the most popular type of spring waters used by the Romans for their healing properties. An analysis of the use of sulphur as a substance effectively demonstrates the way in which religious and scientific beliefs were able to be tied into hopes for cures brought about by sulphur hot springs.

Sulphur was a widely recognized substance in the ancient world. Its striking yellow-green colour, even in the natural state, and its strong odour are very distinctive. For some, it held an association with divinity; for others, sulphur had a practical application for ordinary living. The smell of sulphur which followed a strike of lightning was explained by Virgil as a sign from Jupiter.[1] Lucretius and Seneca both offer explanations for the causes and results for the same phenemonon.[2] Pliny also describes the smell of sulphur caused by lightning and goes further in saying that lightning has a sulphurous nature.[3] Sulphur was believed to cause other natural events including the heating of water.[4]

Sulphur's divine or magical association is evidenced in its use for purification rituals.[5] Medea, in Ovid's *Metamorphoses*, tries to work her magic on her dying father-in-law, whose life she hoped to extend by purifying him with sulphur. Apuleius described a purification ritual of a ship which used sulphur, egg, and a torch, while Juvenal says that sulphur, torches, and damp laurel-branches are necessary for purifying. Pliny also reports that sulphur is used in religious ceremonies for purifying houses.[6] Other occurrences of the powers of sulphur are evident as well. Ovid describes smoking, burning sulphur visible on the shores which Aeneas and his crew pass.[7] Lucretius and Apuleius write that the strong smell of sulphur is capable of killing men.[8] Finally, in what must have appeared as an extraordinary vision, sulphur-soaked torches are said to have played a part in Bacchic ritual because of their ability to stay ablaze even when submersed in water.[9]

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[1] Virgil *Aen.* 2.687-700.

[2] Lucretius 6.219-222; Seneca *QNat.* 2.21.2.

[3] Pliny *HN* 35.174-175, 117. See J. F. Healy, in French and Greenaway 1986, 131-132.

[4] Seneca *QNat.* 3.24.4; Ovid *Fasti* 1.2.

[5] For sulphur as a magical agent, see: Eli Edward Burriss, *Taboo, Magic, Spirits; A Study of Primitive Elements in Roman Religion* (New York, 1931), 228-229.

[6] Ovid *Met.* 7.261; Apuleius 11.16.14-18; Juvenal *Sat.* 2.157-158; Pliny *HN* 35.117.

[7] Ovid *Met.* 14.85-88.

[8] Lucretius 6.806-808; Apuleius 9.27.17-21.

In contrast to these impressive aspects of sulphur, there was also a more practical application which was known to the Romans. Rufus refers to sulphur as a building material and Cato recommends using it in a mixture to make a wine storage jar. Sulphur is also known as a bleaching agent, capable of turning objects white.[10]

Along these practical lines, sulphur's use as a medicinal ingredient was also known. Celsus generally regards sulphur as a cleansing agent which is especially good for the skin or for purging the internal parts of the body. He prescribes sulphur in many formulations which range from medicine for the relief of coughing to the healing of scabies. Scribonius Largus frequently specifies sulphur as an ingredient for many prescriptions. Non-medical writers also wrote of the benefits of sulphur. Columella advises various concoctions with include sulphur for treatment of skin diseases on oxen and sheep. Pliny records sulphur as an ingredient in mixtures devised to remove freckles or to stop hair loss. Its wide range of application, just as with many medicinal recipes, suggests a belief in the powers of sulphur rather than an actual understanding of its physical capabilities.[11]

Sulphur was recognized as having many remarkable properties. It would have been difficult to separate a substance having such obvious powers from the supernatural or divine. Because the Romans saw positive results from the use of sulphur, both medical and otherwise, it was assumed that similar effects would be brought about by the sulphur in mineral springs. Pliny even comments "its potency is also seen in hot springs."[12] The underlying belief in the gods' protection and association with both sulphur and spring waters added much weight to the conviction that sulphur springs were a medically-sound means by which restored health could be gained.

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[9] Livy 39.13.12.

[10] Rufus 4.3.2; Cato 39.1; Apuleius 9.24.10-13; Martial 7.13.

[11] Celsus 4.10.4; 10.28.16b; Scribonius Largus 250.2; Columella 6.31.2; Pliny *HN* 24.186; 28.164.

[12] Pliny *HN* 35.117.

Appendix 4
Text and Translation of Cassiodorus *Var.* 9.6

A Letter from from Theoderic the King to Aloiosus the Architect

Si audita veterum miracula ad laudem clementia nostrae volumus continere, quoniam augmenta regalis gloriae sunt, cum sub nobis nulla decrescunt, quo studio convenit reparari quod etiam nostris oculis frequenter constat offerri? delectat enim salutiferi Aponi meminisse potentiam, ut intellegas, quo desiderio cupimus reficere quod de momoria nostra nescit exire. [2] Caerulum fontem vidimus in formam dolii concavis hiatibus aestuantem et fornaces anhelantium aquarum circumducto tereti labio naturae probabili dispositione coronatas: quae licet more calidae nebulosos vapores exhalent, hanc tamen iucundam perspicuitatem aspectibus humanis aperiunt, ut quivis hominum illam gratiam desideret contingere, etiam cum non ignoret ardere. ore plenissimo in sphaerae similitudine supra terminos suos aquarum dorsa turgescunt, unde latex tanta quiet defluit, tanta quasi stabilitate decurrit, ut eum non putes crescere, nisi quia inde aliquid rauco murmure sentis exire. [3] Veniunt aquae per algentes meatus tali fervore succensae, ut post recurva spatia, quae arte facta sunt longiora, calores sint maximos reddituræ. o magistri mirandum semper ingenium, ut naturae furentis ardorem ita ad utilitatem humani corporis temperaret, ut quod in origine dare poterat mortem, doctissime moderatum et delectationem tribueret et salutem! iuvat videre secretum, latices vapores igneos exhalantes, amicum undis indesinenter ardorem, et calorem venire decursu rivi, unde usualiter solebat extingui. merito dicunt philosophi elementa sibi mutuis complexionibus illigari et mirabili coniungi foederatione, quae inter se contraria intelleguntur varietate pugnare. [4] Ecce madentem substantiam vapores producere constat ignitos, quae mox ad thermarum aedificia decora pervenerit, illisa cautibus unda descendens et aera sua qualitate succendit et tactu fit habilis, cum recepta fuerit in lavacris: unde non tantum deliciosa voluptas adquiritur, quantum blanda medicina confertur. scilicet sine tormento cura, sine horrore remedia, sanitas impunita, balnea contra diversos dolores corporis attributa. quae idea Aponum Graeca lingua beneficialis nominavit antiquitas, ut causam tanti remedii aeger cognosceret, cum de tali nomine dubium nil haberet. [5] Sed inter alia loci ipsius bona illud quoque stupendum esse didicimus, quod una fluentorum natura diversis ministeriis videatur accommoda. nam protinus saxo suscipiente collisa inhalat primae cellulae sudatoriam qualitatem: deinde in solium mitigata descendens minaci ardore deposito suavi temperatione mollescit: mox in vicinum producta cum aliqua dilatione torpuerit, multo blandius intepescit: postremo ipso quoque tepore derelicto in piscinam Neronianamfrigida tantum efficitur, quantum prius ferbuisse sentitur. [6] Non inmerito auctoris sui participans nomen collega est cum viriditate gemmarum, ut ipsa quoque vitrei elementi colore perspicua quasdam trementes undas quieta commoveat. sed ut ipsum quoque lavacrum mundius redderetur, stupenda quadam continentiae disciplina, in undam, qua viri recreantur, si mulier descendat, incenditur, propterea quia et ipsis altera exhibitio decora collata est: scilicet ne ardentium aquarum fecundissimum locum non crederent habuisse, unde plurima largiretur, si uterque sexus uno munere communiter *uteretur. [7] Haec perennitas aquarum intellegendi praestat indicium per igneas terrae venas occultis meatibus influentem imitus in auras erumpere excocti fontis inriguam puritatem. nam si naturae fuisset illud incendium, sine interitu substantia non esset amissum: sed aquae materia sensibilis, sicut peregrinum contraxit ignem, sic iterum nativum facile recepit algorem. Praestat et aliud adiutorii genus vis illa medicabilis. [8] nam iuxta caput fontis scintillosi quendam sibi meatum provida natura formavit. hinc desuper sella composita, quae humanis necessitatibus in apsidis speciem perforatur, aegros suscipit interno umore diffluentes: ubi dum fessi nimio languore consederint, vaporis illius delectation recreati et lassa viscera reficiunt et umores noxia infusione largatos vitali ariditate constringunt: et quasi aliquo desiderabili cibo refecti valentiores queant protinus inveniri, sic medicabili substantiae venti a sulfure quod calet, a salsedine quod desiccat. talia posteris non tradere hoc est graviter in longa aetate peccare. [9] Quapropter antiqua illic aedificiorum soliditas innovetur, ut sive in cuniculis sive in thermis fuerit aliquid reparandum, te debeat imminente reconstrui. virgulta quoque noxia importunitate nascentia evulsis cespitibus auferantur, ne radicum quidam capilli paulatim turgentes fabricarum visceribus inserantur et more vipereo prolem sibi fecunditate contraria nutriant, unde se compago casura disrumpat. [10] Palatium quoque longa senectute quassatum assidua reparatione corrobora. spatium, quod inter aedem publicam et caput igniti fontis interiacet, silvestri asperitate depurga. rideat florenti gramine facies decora campestris: quin etiam ardentis aquae fertilitate laetatur miroque modo dum proxime salem generet sterilem, nutriat pariter et virores. [11] Sed non his tantum beneficiis Antenorea terra fecunda est: infert et alia, quae multo grandius obstupescas. corda illa, ut ita dixerim, montium invicem secretarii negotia contentiosa discingunt. nam si quis forte pecus furatum pilis nativis solito more spoliare praesumpserit, undis ardentibus frequenter inmersum necesse est ut ante decoquat quam emundare praevaleat. o vere secretarium iure reverendum, quando in his aquis non solum sensum, sed etiam verum constat esse iudicium et quod humana nequit altercatione dissolvi, fontium datum est aequitate definiri. loquitur illic tacita natura, dum iudicat, et sententiam quodam modo dicit, quae perfidiam negantis excludit. [12] Sed quis ista conservare neglegat, quamvis plurima tenacitate sordescat: siquidem ornat regnum, quod fuerit singulariter toto orbe nominatum. et ideo pecunia, quae tibi data est, si opus non potuerit implere suscepturm, quantum adhuc expendendum esse credideris, missis nobis brevibus indicabis, quia non gravamur expendere, ut tanta videamur ruris moenia custodire.*

If we wish to preserve the wonderful things of our ancestors which we have heard about for the praise of our kindness, because they are augments of regal glory, since under our rule nothing decreases, by what eagerness is it fitting that what happens to meet even our eyes frequently should be repaired? For it is delightful to remember the power of health-giving Aponus, so that you may understand, with what desire we wish to rebuild what is unable to depart from our memory. [2] We see the blue fountain boiling into the form of a dolium in the concave gaps, and furnaces of steaming waters surrounded by a smooth lip, crowned by a probable disposition of nature. Although by custom these hot waters exhale steamy vapours, nevertheless they reveal a pleasant view to human visions, so that anyone of men would desire to touch that pleasure, even though he knows it

burns. With a full open mouth in the likeness of a sphere, the backs of the waters swell up above their limits, from where the fluid rises so quietly and runs down so steadily, that you would not think it increases, were it not for the fact that you hear something going out with a noisy murmur. [3] The waters arrive through cold conduits fired by such heat, that after winding spaces, which are made longer by skill, they will give up the greatest heat.[1] O always to be admired talent of the master-builder, how he would temper the seething heat of nature in such a way for use on the human body, that what could originally give death, very cleverly moderated might give both delight and health! It is pleasing to see the secret, waters exhaling fiery steam, a ceaseless burning friend to the water, and heat coming from the tapping of a stream, from where it was usually accustomed to be extinguished. The philosophers say rightly that the elements are joined by mutual combinations to themselves and are connected by a wondrous union, which are understood to fight among themselves with contrary variety. [4] Lo it is agreed that a wet substance produces fiery vapours, which then enters into the beautiful buildings of the baths, a stream, having been dashed on the rocks, descending both warms the air by its quality[2] and becomes gentle to touch, when it has been received in the baths: from where not only delightful pleasure is acquired, but pleasant medicine is applied. To be sure, healing without anguish, remedy without horror, health without penalty, the baths are suitable for diverse pains of the body. For this reason, kindly antiquity named these baths Aponus in the Greek language on account of their benefits, that a sick man might know the cause of such a great remedy, since he would have no doubt about such a name.[3] [5] But among the other good things of this place, we have learned that this is also to be wondered at, that the one nature of the streams seems suited for diverse uses. For immediately struck from the rock suspended above, it breathes a sudatory quality upon the first small room, then having been made mild descending into a pool, after the threatening heat is removed, it becomes mild with an agreeable temperature: then conducted into the next pool, when from some delay it has become sluggish, it becomes much more pleasantly warm. [6] Finally the heat itself having been left behind, it is brought into a Neronian pool so cold that it seems to have boiled before.[4] Not undeservedly sharing the name of its author, it is a colleague with the greenness of gemstones, so that transparent with the colour of the vitreous element the still pool produces certain trembling waves. But so that the pool might be rendered cleaner, with an astonishing teaching of restraint, by which men are refreshed, if a woman goes in the water, she is burned, on account of which also another decorous offering was appointed for them; presumably so that they should not believe that the place most abundant in hot waters did not have the means of bestowing many advantages, if each of the sexes should use one establishment together.[5] [7] This perpetuity of water provides evidence first to be understood that, the running purity of the hot stream, flowing within the fiery veins of the earth in hidden courses, bursts out from deep down into the breezes. For if it was fire by its nature, then it would not have been sent without destruction of its substance. But the sensitive material of water, just as it touches strange fire, thus again easily receives its natural coldness. [8] And this medical power has another manner of helping; for beside the head of the sparkling spring prudent Nature formed a certain path for itself. Above here a bench has been placed, which is cut for human needs in the form of an apse,[6] it sustains sick men flowing with internal moisture: when men, weak from too much languor sit there, being revived by the delight of this vapour they both refresh their drooping stomachs and they dry out the humours having been confered by a harmful infusion with the life-giving dryness, and just as if refreshed from some desirable food, they were able to be found immediately stronger. Thus what heats comes from sulphur for medical substance, what dries comes from salt. Not to hand such things to our descendants, this is to fail seriously over a long period. [9] Wherefore let that old solidity of the buildings be renewed, so that whether in the baths or in the channels something ought to have been repaired, it should be rebuilt on your insistence. Also let harmful bushes which have grown unsuitably, be removed with the sods having been torn away - so that any shoots of roots gradually swelling may not be grown in the interior of the buildings and may not nourish offspring in a snake-like manner with fecundity contrary to itself, as a result of which a tottering structure may collapse. [10] Also strengthen with unremitting repair the palace shaken by long old age. Clear of rough wood, the space which lies between the public building and the source of the heated spring. Let the beautiful face of the plain laugh with flourishing crops, or rather let it delight in the fertility of the burning water; and in an astonishing way although nearby it produces unprofitable salt, equally it also nourishes green fields.[7] [11] But the Antenorean land[8] is rich not only from these benefits; it also bears others, which will astound you very much more. Those hearts of the mountains, so to speak, unravel contentious business instead of the judgment chambers. For if anyone should presume to strip a stolen beast of its natural hairs in the usual manner, it is necessary that he boils it immersed frequently in burning water, before being able to clean it. O judgement chamber which ought truly to be revered by justice, since it is established that in these waters there is not only sense, but also true judgement, and what cannot be resolve by human discussion, is given to be defined by the equity of the springs. Silent nature speaks there, while it judges, and somehow it pronounces judgement, which excludes the perfidy of denial. [12] But who may neglect to save these things, although he may be soiled very much by miserliness? Since he adorns the kingdom, which has been exceedingly renowned in the whole world. And for that reason, the money, which has been given to you, if it should not be able to complete the work undertaken, you will indicate to us in a brief letter however much you believe still needs to be spent, because we are not unwilling to spend, so that we may seem to preserve such great walls of the countryside.

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[1] For a similar description of the source of the spring and the route by which it travels, cf. Claudian *Carm. Min.* 26.27-28; 45-64.

[2] *aera*, taken here as a Greek accusative, might also be construed as a neuter accusative of *aes*. If this is the case, then the hot water is flowing through bronze pipes which conduct the heat out of the water. A description of the same process, but in reverse, so that cold water is heated, is found in Seneca: *Facere solemus dracones et miliaria et complures formas in quibus aere tenui fistulas struimus per declive circumdatas, ut saepe eundem ignem ambiens aqua per tantum fluat spatii quantum efficiendo calori sat est.* (*QNat.* 3.24.2)

[3] Aponus = ἄπονος, without pain or suffering.

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[4] The adjective Neronianam refers to builder of the pool with the name Neronius, rather than to the emperor Nero. This is made clear by the following passage referring to the builder. See Lazzaro 1981, 71.

[5] The language is obscure here. An alternate reading would indicate that the water is heated (incenditur) if a woman enters the water. The idea, in either case, is that the baths were not intended to be used for mixed bathing. Also, see Martial 6.42: *fontes Aponi rudes puellis.*

[6] This would seem to be a similar arrangement to that at Baiae, where sweating chambers were placed in the hillside. See Celsus 2.17.1; 3.21.6.

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[7] cf. Claudian Carm. Min. 26. 20-22; 57-58.

[8] Antenor, a Trojan who wanted to end the war with the Greeks by returning Helen. After Troy fell, he went to Italy and was the founder of Patavium. See Livy 1.1.

Appendix 5

Principal Literary Citations for Healing Spas and Mineral Springs

In the following list, I have provided the main literary citations which contain information about healing spas and thermal-mineral springs in Italy. Passages are included especially if they reveal some aspect of the manner of use, location, or date of a particular spa. A translation is given for each citation. When available, the English text from the easily accessible Loeb series or other standard translations is used. For these passages, the translator is indicated at the end of the English text. If no translator is given, the translation is my own.

Ausonius *Mos.* 8.341-348

> *vidi ego defessos multo sudore lavacir / fastidisse lacus et frigora piscinarum, / ut vivis fruerentur aquis, mox amne refotos / plaudenti gelidum flumen pepulisse natatu. / quod si Cumanis huc adforet hospes ab oris, / crederet Euboicas simulacra exilia Baias / his donasse locis: tantus cultusque nitorque / adlicit et nullum parit oblectatio luxum.*
>
> I myself have seen some, exhausted by the intense heat of the baths, scorn the pools and cold plunge-baths, and, straightway refreshed by the river, buffet the cool stream, threshing it with their strokes. But if a stranger were to arrive here from the shores of Cumae, he would believe that Euboean Baiae had bestowed on this region a miniature copy of its own delights:so great is the charm of its refinement and distinction, while its pleasures breed no excess. (trans. H.G. White)

Avitus *Anth.Lat.* 23

> *Exultent Apono Veneti, Campania Baias / Graecia Thermopolis: his ego balneolis.*
>
> Let the Venetians boast about Aponus, the Campanians about Baiae, the Greeks about Thermopylae: I rejoice in these baths.

Caelius Aurelianus *Chron.* 1.1.42

> *utendum etiam fomentis sive vehementioribus illisionibus aquarum, quas Graeci cataclysmos appellant, et primo calidarum, deinde frigidarum. ordinandae etiam mutationes earum ad usus naturalium aquarum, scilicet earum quae non odore percutiant. natationes vero sub divo fieri reprobamus. ceteris enim corporis partibus aqua complexis, solum supernatans remanet caput, quod necessario perfrigescens inaequalitatem corporis facit.*
>
> Also employ douches or strong streams of water (Greek cataclysmoe), using first warm, then cold water. After this treatment a change to baths in natural waters may be prescribed, but the latter should be free from pungent odour. Do not, however, permit swimming in the open air. For, while the other parts of the body are covered with water, the head alone remains above water and necessarily becomes chilled, producing a lack of balance in the body. (trans. I.E. Drabkin, Chicago, 1950)

Caelius Aurelianus *Chron.* 1.1.44

> *tunc etiam naturalibus aquis utendum vel siccis vaporationibus et longa per maria navigatione.*
>
> Then make use of natural waters, dry heat, and long sea voyages. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 1.4.111-112

utendum etiam quis naturalibus, hoc est naturali virtute medentibus, sed quae nulla odoris vexatione adficiant aegrotantem. adhibenda igitur natatio et sole corpus torrendum, quod Graeci heliosin vocant, sed praetecto capite.

Natural waters, i.e., those having a natural curative property, may also be used, provided that they have no strong odor which might affect the patient. Prescribe swimming [in such waters]' also baking in the sun (Greek heliosis), with head protected. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 1.5.169

utendum quoque naturalibus aquis, ut sunt nitrosae, et magis si odoris non fuerint tetri, quo membranae capitis quatiantur.

Use should also be made of natural waters, such as alkaline springs, particularly those free from any pungent odor which might injure the membranes of the brain. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 2.1.48

tunc resumendos atque naturalibus aquis dandos et magis calidioribus, ut sunt in Italia patavinae, vesevinae, et senanae, et caeretanae appellatae. Etenim albae sive albulae quae sunt appellatae, quod sint frigidae virtutis, solutione laborantibus vel fluore quorumlibet officiorum naturalium a veteribus sunt approbatae. utendum etiam natationibus marinis, vel supradictarum aquarum: et primo partibus passione vitiatis inflatae vesicae sunt adiungendae, quo natandi laborem minuant. item aquarum ruinis partes in passione constitutae sunt subiciendae, quas Graeci cataclysmos appellant. plurium etenim earum percussiones corporum faciunt mutationem.

Then give restorative treatment and have the patient use natural waters, especially the warm spring, such as the springs of Padua, Vesuvius, Sena, and Caere in Italy. And, in fact, the so-called 'Alban" or "Albulan" springs, by reason of their cooling properties, are recommended by the ancients for persons suffering from a condition of looseness or excessive flux in any of the natural functions. Also prescribe swimming in the sea or in the springs we have just mentioned; at first, however, an inflated bladder should be attached to the paralyzed parts to reduce the effort required in swimming. The strong impact of the water is very effective in bringing about a change in the condition of the body. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 2.3.70

tunc etiam totius capitis curationem ex illisione aquarum supercadentium, quam Graeci cataclysmum appellant; quibus etiam aurium vicina sunt maxime concranda. dehinc acopis et dropacis et malagmatibus acrioribus et aquis naturalibus utendum. sic enim intardata corporibus emoveri atque exludi mutatione poterunt curationis.

Then prescribe the treatment in which the whole head is placed under a shower of water (Greek cataclysmos). It is particularly important that these measures benefit the parts near the ears as well as the ears themselves. In addition, prescribe restorative ointments, pitch plasters, sharp emollient plasters, and natural waters. For by the metasyncritic effect of the treatments chronic disorders can be removed and driven from the body. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 2.4.78

tunc interpositis duobus vel tribus diebus, ex humore in quo fuerit decocta mali punici cortex adhibemus oris collutionem, vel in quo sit praetincta ignita galla, vel ex aquis sua virtute medentibus.

Then after an interval of two or three days prescribe as a mouthwash water in which pomegranate rind has been boiled, or in which burned oak galls have been soaked, or other waters with curative properties. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 2.7.109

dehinc mutation locorum appetenda et magis maritimorum, tum usus aquarum naturalium ex puibus erit caput fovendum.

Again, change of climate, especially by a sea trip, is helpful; and so is the use of spring waters for fomenting the head. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 3.1.10

et aquarum naturalium usus, quarum praestant in Italia cotiliae appellatae sive albae vel nepesinae, tum etiam cataclysmus, hoc est aquarum illisio superne iisdem locis qui patiuntur; utilis denique maritima et plurima mare tenus coversatio, atque consuetudo frigidi lavacri, quam psichrolusian appellant

The following prescriptions are also beneficial...the use of natural waters, of which the best in Italy are the Cutilian, Alban, and Nepesine springs; and the shower bath, i.e. the playing of a stream of water from above upon the affected parts. Finally, frequent sea trips and sojourning at the seashore, as well as the habit of taking cold baths (Greek psychrolusia) will prove beneficial. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 3.2.45

tunc aegrotantes maritima natatione exercendi atque cataclysmo curandi, hoc est aquarum illisione, suppositis partibus patientibus. animo praeterea securo atque facili esse convenit curandos, et aquarum naturalium usum adhibere, ut sunt in Italia quae cotiliae appellatae nepesinae. lavacro atque potu aptissimo utendum

Then have the patient take the exercise afforded by swimming in the sea. And prescribe the use of a shower, i.e., the playing of a stream of water over the affected parts. The patient should be kept unworried and calm. And it is well also to prescribe the use of natural springs, for instance, the Cutilian and the Nepesine in Italy; have the patient bathe in these waters and drink them, for this will be most beneficial. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 3.4.54

tum alia mutatione resumendi aegrotantes, adhibito usu aquarum naturalium atque natatione maritima et vaporatione locorum natura spirantium, quo etiam sudores moveantur, non ob virium fatigationem, sed quo possit calida spiratione ac naturali coporatio fieri patientium partium.

Then make another change and apply restorative measures, having the patient use natural springs and also swim in the sea. And let him make use of the vapors from places having natural emanations. These warm, natural emanations will induce sweating and will have the effect, not of fatiguing the patient, but of promoting the metasyncrisis of the affected parts. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 3.5.72

fertur enim statim per nares quae vultum tenuerat fellis infectio, et magis si aeger ingrediens calidas cellas fervens descenderit solium atque requiescens diurno tempore aqua calida fuerit vaporatus

For the yellow bile which had suffused itself over the face will thus be swiftly carried out through the nose, especially if the patient passes through the steamrooms before descending into the hot bath, and then remains in the bath a long while and is thus thoroughly steamed by the hot water. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 3.5.73

et propterea recorporativa in sudorem provocantia fellis infectionem, hoc est dropax iugiter adhibitus vel solis fervor torridus, quem Graeci heliosin appellant, item naturalium aquarum exhalatio vel medicaminum sudorem moventium usus. aspergendum denique corpus struthio, nitro sulphure, et his aspersionibus quae ob pruritum corporis adinventae sunt, a Graecis sympasmata appellata. ferventiore aqua fovendi aegrotantes.

So, too, employ metasyncritic measures that cause the bile suffused through the body to pass into sweat, e.g., the continual application of pitch plasters, intense baking in the heat of the sun (Greek heliosis), vapors from natural spring waters, and the use of sudorific drugs. Also dust the body with soapwort, soda, sulphur, and those powders, called sympasmata by the Greeks which have been found suitable for an itching condition. And foment the patient with hot water. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 3.5.74

utendum etiam aeris mutatione et gestatione varia et littoraria moratione, animi quoque laxamento ac iucunditate et aquarum naturalium voluptate, natatione varia...

Prescribe also a change of climate, varied passive exercise, and sojourning at the seashore. See that the patient is mentally relaxed and diverted, and have him enjoy the use of natural springs and do various kinds of swimming. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 3.6.89

utendum etiam locorum atque aeris mutatione, tum heliosin, quam nos corporis torrorem dicimus. ita dropacis adhibendus usus et pulveris nitri fricatio et sinapismus specialiter et usus aquarum naturalium vel natatio maritima.

Also have the patient visit new places and change climate. And prescribe heliosis ['sun-bathing'], which we may call in Latin corporis torror ['baking of the body'], pitch plasters, rubbing with powdered nitrum, and especially mustard plaster. Also prescribe the use of natural springs and sea-bathing. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 3.7.93-94

convenit praeterea locorum atque aerum commutatio....utilis praeterea littoraria navigatio atque natatio maritima vel naturalium aquarum;

In addition, a change of locale and climate is beneficial....Again, a boat trip along the shore and swimming in the sea or in natural springs are helpful. (trans. I.E. Drabkin)

Caelius Aurelianus Chron. 3.8.112

adhibenda etiam acopa ferventia, et sudationes ex naturali materia provocare. habet enim recorporandi virtutem ex quacumque metallorum materia exhalatio naturalis.

And induce sweating by means of natural substances; for the vapors that arise naturally from any mineral substance have a metasyncritic property. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 3.8.117

tum profectu accedent regula cyclorum adhibenda natatio maritima vel aquarum naturalium. alii vero non absurde etiam aquae marinae vaporationem probant adhibendam,quo sudores provocantur.

inquiunt enim implendum solium aqua marina ferventi, tunc quadrangulam compaginem immittendam praeligatam loris in quam erit includendus aegrotans. sed praeliganda compago pelle ut aquae prohibeat ingressum, quo exhalatione vaporis calefactus aegrotans in sudorem venire cogatur.sed erit aqua calefacienda innovatione frequenti ferri candentis immissione massurum.

Then as the patient improves, prescribe swimming in the sea or in natural springs, in harmony with the standard cycle of treatments. Some physicians, not without reason, recommend a hot vapor bath with sea water to induce sweating. They have the bathing pool filled with heated sea water, then place the patient in an oblong box and let this box down into the water with the help of ropes. The box, however, is first covered with leather to prevent water from seeping in, so that the patient may be warmed by the hot vapors and thus made to sweat. But keep renewing the heat of the water constantly by immersing masses of red-hot iron. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 4.1.1

heliosis, dropacismus et lixivii calidi perfusio et psichrolusia at cataclysmus, hoc est aquarum e supernis illisio, natatio maritima et aquarum naturalium, et magis frigidarum quae aluminis naturam exhalent, quas stypterizusas vocaverunt, sive ferrugineas, quas siderizusas appellant.

...[prescribe] sun-bathing, pitch plasters, a dousing with hot lye, cold baths, a shower bath, that is to say, a stream of water from above, and swimming in the sea or in mineral springs. Cold springs that give off vapors of alum (Greek stypterizusae) and iron waters (Greek siderizusae) are the best for this purpose. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 4.3.76

item pergrinatio atque natatio maritima et naturalium aquarum

A trip abroad and swimming in the sea and in natural waters are also beneficial. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 4.7.104

peregrinatio quoque adhibenda et long navigatio, et usus aquarum naturali virtute medentium, et magis sulphuris ac medicaminis virtutem redolentium, item maritimarum, et primo ferventium tum frigidarum.

And let him take a trip abroad or a long sail, and make use of waters having natural therapeutic properties, preferably those with a sulphurous and medicinal odor. Sea water should also be used for bathing, first hot and then cold. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 5.2.40

item usus adhibendus aquarum naturalium calidarum, tum frigidarum, ut sunt in Italia quae appellatae sunt albulae vel cotiliae.

Also prescribe the use of natural springs, both hot and cold, e.g., the Albulan or Cutilian springs in Italy. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 5.4.77

tum encathismatibus utendum ex aqua marina vel salsa calida, et magis his qui mordicatione quadam locorum in iisdem passionibus tanguntur. tum cataclysmo utendum cuius nominis vim praescriptis libris saepius latinavimus. ita natatio adhibenda aquarum sua medentium, quibus magis erit in solutionibus utendum. eligendae sunt namque specialiter quae aluminis habeant qualitatem, ut sunt in Italia albulae appellate et nepesinae et cotiliae et auguriae. his vero qui lapidibus vel scabro *visicae afficiuntur erunt eligendae aquae salsae, vel quae nitri habeant qualitatem, ut apud Aenariam insulam, quae potandae atque lavacro adhibendae sunt.*

Again, prescribe sitz baths of hot sea water or salt water, especially in cases of these diseases in which sharp pains are present in the parts. And use a shower bath (Grk cataclysmos, which we have often translated to Latin in previous books). Also prescribe swimming in waters that have curative properties, employing this measure chiefly in cases involving a state of looseness. In such cases choose especially those waters that contain alum, e.g., the so-called Albulan, Nepesine, Cutilian, and Augurian springs in Italy. But in cases of bladder stone or scabies, choose waters containing salt or nitrum, e.g., the springs on the island of Aenaria; these springs should be used for both drinking and bathing. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 5.10.126

utendum etiam aquis sua virtute medentibus, quas supra memoravimus, itemque his quae in Aenaria insula et Teanitarum provincia esse perhibentur, ceterarum quoque resumtivarum materiarum usum adhibentes, ut nutribiliorum sucorum.

Also employ waters having curative properties; to those mentioned above we may add the waters on the island of Aenaria and those in the region of Teanum. In addition, prescribe other restorative substances, e.g. nutritious juices. (trans. I.E. Drabkin)

Caelius Aurelianus *Chron.* 5.11.134-135

et nunc ferventia lavacra quae plurimum detrahant, nunc frigida quae corpus in densitatem cogant: denique psychrolutarum corpora densa ac veluti testea sentiuntur. convenit etiam arenae littorariae adhibendus fervor, tum natatio maritima vel aquarum naturali virtute medentium; et in lavacris sudore perfecto asperginem salis adhibere

Prescribe some hot baths, for these are very effective in reducing flesh, and also some cold baths, for these condense the body; in fact, the bodies of persons who bathe in cold water are found to be hard and like shells. In addition, let the patient bake his body with the hot sand of the beach. Also prescribe swimming in the sea or in waters that have natural curative properties. And in the hot baths, after sweating is completed, have the patient's body sprinkled with salt. (trans. I.E. Drabkin)

Cassiodorus *Var.* 2.39

nam etsi hominum cura fabricata noscuntur, naturalibus certe ministeriis exhibentur. fornaces ibi non robora convecta succendunt; cessante flamma perpetuus calor operatur; illic globi fumiferi nesciuntur; aura est purisssima, quae ministrat vapores, sudores provocat dulciter anhelos.

For although the manufactured concerns of men are known, certainly they are produced by natural services. There the furnaces do not burn gathered up wood; perpetual heat operates by unattended flame; here smoking balls are not known; the air is very pure, which provides steam, it gently induces sweating.

Cassiodorus *Var.* 9.6

See Appendix 4.

Celsus 1.1.2

Prodest etiam interdum balineo, interdum aquis frigidis uti.

It is useful sometimes to use the bath, and sometimes to use cold spring water.

Celsus 2.17.1

Sudor etiam duobus modis elicitur, aut sicco calore aut balneo. Siccus calor est et harenae calidae et Laconici et clibani et quarundam naturalium sudationum, ubi terra profusus calidus vapor aedificio includitur, sicut super Baias in murtetis habemus.

And sweating is brought forth by two methods, either by dry heat or by the bath. There is the dry heat either of hot sand, or of the Laconicum, or of the oven, or of some places of natural sweating, where hot steam pouring forth from the ground is enclosed in a building, just as we have above Baiae in the myrtles.

Celsus 3.21.6

Evocandus est sudor non per exercitationem tantum, sed etiam in harena calida vel Laconico vel clibano similibusque aliis; maximeque utiles naturales et siccae sudationes sunt, quales super Baiias in murtetis habemus.

Sweating should be brought about not through too much exertion, but also in the hot sand or by the Laconicum or by oven or by other similar methods; and especially useful sweating places are the natural and dry ones, just as we have in the myrtles above Baiae.

Celsus 3.27.1

Ac si quo loco vel naturales vel etiam manu factae tales natationes sunt, iis potissimum utendum est; praecipueque in iis agitanda membra, quae maxime deficiunt; si id non est, balneum tamen prodest.

And if there are pools available, either natural or even the sort made by hand, they ought to be used as much as possible, the limbs which are most injured most espeically ought to be moved in them; if there is not a ppol, then a bath is useful.

Celsus 4.3.3

Prodest etiam movere sternumenta; caput radere, idque perfundere aqua calida vel marina vel certe salsa, sic ut ei sulpur quoque adiciatur

It is also useful to cause sneezing; to shave the head, and to bath it with hot water or sea water or at least with salt water, if sulphur is also added.

Celsus 4.12.7

Huic generi inutilissimum balineum est: lectiones exercitationesque superioris partis necessariae, item unctiones frictionesque; his perfundi frigida atque in eadem natare, canalibus eiusdem subicere et stomachum ipsum et magis etiam a scapulis id, quod stomachum est, consistere in frigidis medicatisque fontibus, quales Cutiliarum Sumbruinarumque sunt, salutare est;

In this sort of disease the bath is most harmful; reading aloud and exercise of the upper limbs are needed, as also anointing and rubbings; it is good for the patient to have cold water poured over him, and to swim in cold water, also to submit his stomach to jets of it, especially at the back of the stomach from the shoulder-blades downwards, to bathe in cold medicinal springs, such as those at Cutiliae and Sumbruina. (trans. W.G. Spencer, *LCL*, 1935)

Cicero *Att.* 1.16

Surgit pulchellus puer, obicit mihi me ad Baias fuisse. falsum, sed tamen "quid? hoc simile et" inquam "quasi in operto dicas fuisse?" "quid" inquit "homini Arpinati cum aquis calidis?" "narra" inquam "patrono tuo, qui Arpinâtis aquas concupivit".

Our little Beauty (Clodius) gets on his feet and accuses me of having been at Baiae - not true, but anyhow, "Well," I reply, "is that like saying I intruded on the Mysteries?" "What business has an Arpinum man with the hot springs?" "Tell that to your counsel," I retorted: "he was keen enough to get certain of them that belonged to an Arpinum man." (trans. E.O Winstedt, *LCL*, 1913)

Cicero *Att.* 5.2

Habuimus in Cumano quasi pusillam Romam; tanta erat in iis locis multitudo; cum interim Rufio noster, quod se a Vestorio observari videbat, "strategemati" hominem percussit; nam ad me non accessit. "itane? cum Hortensius veniret et infirmus et tam longe et Hortensius, cum maxima praeterea multitudo, ille non venit?

My place at Cumae was a Rome in miniature - so many people about down here. Among them was our little Rufus, who, finding himself under observation by Vestorius, foiled him by a ruse - he came nowhere near or by me. Odd, you may think, Hortensius called - a sick man, such a long way, and Hortensius to boot - and a great multitude besides, but not Rufus? (trans. E.O Winstedt, *LCL*, 1913)

Cicero *Att.* 10.13

tu antoni leones pertimescas cave. nihil est illo homine iucundius. attende πρᾶξιν πολιτικοῦ. Evocavit litteris e municipiis denos et IIII viros. venerunt ad villam eius mane. primum dormiit ad H.III, deinde, cum esset nuntiatum venisse Neapolitanos et Cumans (his enim est Caesar iratus), postridie redire iussit; lavari se velle et περὶ κοιλιολυσίαν γίνεσθαι.

Don't be too much afraid of Antony's lions. He is a jovial fellow. Just hear how he plays the statesman. He summoned by letter ten leading men and the board of four from the municipal towns. They came to his country house in the morning. First he slept till nine. Then, when he heard the men had come from Naples and Cumae (for Caesar is angry with them), he bade them return on the next day, saying that he wished to take a bath and a laxative. (trans. E.O. Winstedt, *LCL*, 1913, reprint 1984)

Cicero *Att.* 14.16

perpaucis diebus in Pompeiano, post in haec Puteolana et Cumana regna +renavigare+. o loca ceteroqui valde expetenda, interpellantium autem multitudine paene fugienda!

In a few days I am going to Pompeii and after that sailing back to my domains here at Puteoli and Cumae. What attractive places they are, if it were not that one almost has to shun them on account of the crowd of visitors. (trans. E.O. Winstedt)

Cicero *Att.* 21.40.3

si quis requirit cur Romae non sim: quia discessus et; cur non sim in iis meis praediolis quae sunt huius temporis; quia frequentiam illam non facile ferrem. ibi sum igitur ubi is qui optimas Baias habebat quotannis hoc tempus consumere solet.

If anyone asks why I am not in Rome, it is because it is vacation. If they ask why I do not stay in those of my little properties which are for this time; it is because I would not endure the crowd easily. Therefore I am here where someone who has the best Baian villa is accustomed to pass this time every year.

Cicero *Fam.* 9.2.5

Te vero nolo, nisi ipse rumor iam raucus erit factus, ad Baias venire. Erit enim nobis honestius, etiam cum discesserimus, videri venisse in illa loca ploratum potius quam natatum.

Truly I do not like that you are coming to Baiae, unless that rumour now will have become hoarse. For it will be more honest for us, even when we will have left, to seem to have come to these places as a weeper rather than as a swimmer.

Cicero *Fam.* 9.12

Gratulor Baiis nostris, siquidem,ut scribis,salubres repente factae sunt;nisi forte te amant,et tibi assentantur,et tamdiu,dum tu ades,sunt oblitae sui. Quod quidem si ita est, minime miror,caelum etiam et terras vim suam,si tibi ita conveniat,dimittere.

I congratulate our dear Baiae, if it be true, as you write, that it has suddenly become salubrious; unless of course it is fond of you, and flatters you, and just so long as you are present, has forgotten its former tricks; and indeed if that be the case, I am hardly surprised at all that heaven and earth should desist from their usual violent behaviour in consideration of your convenience. (W.Glynn Williams, *LCL*, 1952)

Cicero *Fam.* 12.20

Gratae mihi tuae litterae, nisi quod sinuessanum deversoriolum contempsisti. Quam quidem contumeliam villa pusilla iniquo animo feret, nisi in Cumano et Pompeiano reddideris "panta peri panton".

Your letter pleased me, except that you expressed contempt for my little lodgings at Sinuessa, an insult which will be bitterly resented by my tiny little villa, unless you make the "amende honorable" at my Cuman or Pompeian house. (W.Glynn Williams, *LCL*, 1952)

Cicero *Quin.* 2.10

Memini enim, cum hominem portarem ad Baias, Neapoli, octophoro Asiciano, machaerophoris centum sequentibus, miros risus nos edere, cum ille, ignarus sui comitatus, repente aperuit lecticam, et paene ille timore, ego risu corrui. .... Sed hominem infirmum in villam apertam, ac ne rudem quidem etiam nunc, invitare nolui.... Marius et valetudine est et natura imbecillior.

For I remember how when I was giving the man [Marius] a lift from Naples to Baiae in Asicius's eight-man litter, with a hundred swordsmen in our train, I can't tell you how I laughed when Marius, all unconcious of his escort, suddenly opened the litter and nearly collapsed with fright, and I with laughter. ...But to invite a man in feeble health to a villa exposed to the weather and, up to the present, not even even roughly finished-I simply hadn't the heart.... Marius is somewhat feeble bothin health and character. (trans. W. Glynn Williams, *LCL*, 1954, reprint 1972)

Cicero *Planc.* 65

At ego, cum casu diebus iis, itineris faciendi causa, decedens e provincia, Puteolos forte venissem, cum plurimi et lautissimi in iis locis solent esse, concidi paene, iudices, cum ex me quidam quaesisset quo die Roma exissem et num quidnam esset novi. .... Quid multa? destiti stomachari, et me unum ex iis feci, quid ad aquas venissent.

It happened that on my way back from the province I had arrived by Puteoli, intending to make the journey then by land, just at the season when the place was thronged with fashionable people; and I nearly swooned, gentlemen, when someone asked me on what day I had left Rome, and whether there was any news....To cut my story short, I dropped the dudgeon, and made myself just one of those who had come for the waters. (trans. N.H. Watts, *LCL*, 1923, reprint 1979)

Claudian *Car. Min.* 26.17-18

Fons, Antenoreae vitam qui porrigis urbi / fataque vicinis noxia pellis aquis, / cum tua vel mutis tribuant miracula vocem, / cum tibi plebeius carmina dictet honos / [5] et sit nulla manus, cuius non pollice ductae / testentur memores prospera vota notae:... [11]Alto colle minor, planis erectior arvis / conspicuo clivus molliter orbe tumet / ardentis fecundus aquae; quacumque cavernas / perforat, offenso truditur igne latex. / [15] spirat putre solum, conclusaque subter anhelo / pumice rimosas perfodit unda vias. / umida flammarum regio: Vulcania terrae/ ubera, sulphureae fervida regna plagae./ quis sterilem non credat humum? fumantia vernant / [20] pascua; luxuriat gramine cocta silex / et, cum sic rigidae cautes fervore liquescant, / contemptis audax ignibus herba viret.... in medio pelagi late flagrantis imago / caerulus inmenso panditur ore lacus... [31] densus nube sua tactuque inmitis et haustu, / sed vitreis idem lucidus usque vadis.... [51] haerent stagna lacu plenas aequantia ripas / praescriptumque timent transiluisse modum; / quod superat, fluvius devexa rupe volutus / egerit et campi dorsa recurva petit. / [55] devehit exceptum nativo spira meatu; / in patulas plumbi labitur inde vias; nullo cum strepitu madidis infecta favillis / despumat niveum fistula cana salem. / multifidas dispergit opes artemque secutus, / [60] qua isussere manus, mobile torquet iter / et iunctos rapido pontes subtermeat aestu / adflatasque vago temperat igne tholos. / acrior interius, rauci cum murmure saxi, / spumeus eliso pellitur amne vapor.- / [65] hinc pigras repetunt fessi sudore lacunas,/ frigora quis longqe blanda dedere morae./ Salve Paeoniae largitor nobilis undae,/ Dardanii salve gloria magna soli, publica morborum requies, commune medentum/ [70] auxilium, praesens numen, inempta salus. / seu ruptis inferna ruunt incendia ripis/ et nostro Phlegethon devius orbe calet,/ sulphuris in venas gelidus seu decidit amnis/ accensusque fluit (quod manifestat odor),/ [75] sive pares flammas undarum lance rependens / arbiter in foedus mons elementa vocat, / ne cedant superata sibi, sed legibus aequis / alterius vires possit utrumque pati: / quidquid erit causae, quocumque emitteris ortu, / [80] non sine consilio currere certa fides. / quis casum meritis adscriber talibus audet?... ille pater rerum... [86] telluri medicas fundere iussit aquas.... Felices, proprium qui te meruere, coloni, [90] fas quibus est Aponon iuris habere sui.... [95]quodsi forte malus membris exuberat umor / languida vel nimio viscera felle rubent, / non venas reserant nec vulnere vulnera sanant / pocula nec tristi gramine mixta bibunt: / amissum lymphis reparant impune vigorem, / pacaturque aegro luxuriante dolor.

Spring that prolongs the life for the dwellers in Antenor's city, banishing by your neighbouring waters all harmful fates, seeing that your miracles stir utterance even in the mute, that a people's love bids poets to honour you in song, [5] and that there is no hand whose fingers have not traces for you some lines in thankful witness of prayers granted.... Lower than a high hill yet higher than the level plain rises a gentle eminence, clear to see from all around. It is prolific in hot springs, for wherever water penetrates its recesses encountering fires drive it forth. [15] The stinking ground exhales vapours, and the water, closed down in its prison of burning rock, forces its way out through fissured channels. It is a region of liquid fire where Vulcan's flames spring forth from earth's breast, a land of buring and of sulphur. Who would not think it barren? The smoking fields are green; [20] the heated rock is thick with grass and, although the rigid rocks turn to liquid from the heat, bold plants grow in the despising fires.... In the middle of the hill is what seems a broad, steaming sea, a blue lake of vast extent.... [31] A thick cloud of steam hangs over it; its waters cannot be touched nor durnk though they are transparent as crystal to the very bottom.... [51] The water in the lake stands motionless, filling it to the brim and fearing to go over its appointed limit. The overflow runs in a stream down a sloping rock and seeks the undulating plain below. [55] A natural but tortuous channel carries the water away and thence it flows into an open conduit of lead. These pipes, noiselessly impregnated with some powderous mineral that the water carries down, produce a white salt. The streams branch off in all directions carrying with them this natural wealth [60] wherever art has directed their going, turning this way and that their errant courses, flowing in swift torrent below aqueducts and warming the arches with the heat of their rushing waters. Within the arches, amid the roarings of the echoing rock, issues forth fiercer steam and vapour as the water rushes out. [65] Then the sick, weak with sweating, seek next the stagnant pools that long time has made pleasantly cool. Hail to thee, stream, generous giver of the waters of healing, chief glory of the land of Italy, doctor of all that come to you, common helper of all Aesculapius' sons; [70] a very present deity for whose aid there is nothing to pay. Whether is is that hell's fiery streams have burst their banks and that Phlegethon gone astray bestows his heat upon the upper world, or that a river, originally of cold water, sinks down into veins of sulphur and rises from there afire (as one would think from the smell) [75] or that the mountain in arbitration summons the two elements to a treaty, balancing a certain amount of water that neither yield to the other but under a just law of equipoise each may withstand the other's might - whatsoever shall prove to be the cause, whatever the origin, [80] of this we may be sure - that you flow not without design. Who would dare to ascribe such a miracle to chance? Who could deny that the over-ruling gods have so ordained: The father of nature...has ordered that healing waters flow from the earth.... Happy ones, whose lot it is to dwell by those banks and [90] to possess Aponus for their own....[95] If it chance that noxious humours swell their limbs or that excess of bile inflames their ailing bowels they need not to open their veins nor to cure one wound with another nor yet to drink medicine of bitter herbs. By your water's aid they renew their lost strength without suffering; amid luxury, the sick find relief from pain. (adapted from M. Platnauer, *LCL*, 1919)

Columella De Agri 2.21.2

Vergilius quod liceat feriis flumine abluere gregem praecipit et idcirco adicit "fluvio mersare salubri," id est salutari; sunt enim vitia, quorum causa pecus utile sit lavare.

Vergil is instructing us as to the lawfulfulness of washing the flock in a river on holidays, and for that reason he adds "to dip in a wholesome stream," that is, in a healing stream; for there are ailments because of which it is expedient to bathe the cattle. (trans. H. Boyd, *LCL*, 1941)

Dio Cassius 48.51.1-2, 5

Τὰ ὄρη ταῦτα πρὸς ταῖς ἔνδον θαλάσσαις ὄντα πηγὰς πυρός τε ἅμα πολλοῦ καὶ ὕδατος συμμιγοῦς ἔχει· καὶ αὐτὸ μὲν καθ᾽ ἑαυτὸ ἑκάτερον οὐδαμοῦ εὑρίσκεται (οὔτε γὰρ πῦρ αὐτὸ οὔθ᾽ ὕδωρ ψυχρὸν αὐτὸ φαίνεται), ἐκ δὲ δὴ τῆς ὁμιλίας σφῶν τό τε ὕδωρ θερμαίνεται καὶ τὸ πῦρ ὑγραίνεται· καὶ ἐκεῖνο μὲν πρὸς τὴν θάλασσαν διὰ τῶν προπόδων ἐς τὰς δεξαμενὰς χωρεῖ, τὴν δ᾽ ἀτμίδα αὐτοῦ ἔς τε οἰκήματα μετέωρα διὰ σωλήνων ἀνάγουσι, κἀνταῦθα αὐτῇ πυριῶνται. ὅσῳ γὰρ ἂν ἐπὶ πλεῖον ἀπό τε τῆς γῆς καὶ ἀπὸ τοῦ ὕδατος ἀναδράμῃ, ξηροτέρα γίγνεται. κατασκευαί τε οὖν περὶ ἀμφότερα πολυτελεῖς ἤσκηνται, καὶ ἔστιν ἔς τε βίου διαγωγὴν καὶ ἐς ἄκεσιν ἐπιτηδειότατα.... τοιαῦται μὲν αἱ Βαΐαί εἰσι....

The mountains here, which lie close to the inner bodies of water, have springs which send forth a great deal of fire mingled with water; and neither of the two elements is found anywhere by itself (that is, neither pure fire nor cold water alone is to be seen), but from their association the water is heated and the fire moistened. The water on its way down the foot-hills to the sea runs into reservoirs and the inhabitants conduct the steam from it through pipes into the upper rooms, where they use the steam for vapour baths; for the higher it ascends from the earth and water, the dryer it becomes. Costly apparatus is in use for turning both the vapour and the water to practical use, and they are very serviceable indeed for the uses of daily life and for effecting cures....So much for the description of Baiae. (trans. E. Cary, *LCL*, 1914)

Dio Cassius 53.30.1-4

Ὁ δ᾽ Αὔγουστος ἑνδέκατον μετὰ Καλπουρνίου Πίσωνος ἄρξας ηρρώστησεν αὖθις, ὥστε μηδεμίαν ἐλπίδα σωτηρίας σχεῖν....καὶ αὐτον μηδὲν ἔτι μηδὲ τῶν πάνυ ἀναγκαίων ποιεῖν δυνάμενον Ἀντώνιός τις Μούσας καὶ ψυχροποσίαις ἀνέσωσε....ὁ μὲν Αὔγουστος οὕτως ἐσώθη, ὁ δὲ δὴ Μάρκελλος νοσήσας οὐ πολλοῷ ὕστερον καὶ τὸν αὐτὸν ἐκεῖνον ὑπ᾽ αὐτοῦ τοῦ Μούσα τρόπον θεραπευόμενος ἀπέθανε.

When Augustus was consul for the eleventh time, with Calpurnius Piso, he fell so ill once more as to have no hope of recovery;...And although he lost the power of attending even to the most urgent matters, yet a certain Antonius Musa restored him to health by means of cold baths and cold potions. ... for though Augustus had been saved in this manner, yet when Marcellus fell ill not long afterward and was treated in the same way by Musa, he died. (trans. E. Cary)

Dio Cassius 61.34.4

Ταῦτα δὲ δὴ ἡ Ἀγριππῖνα ποιῆσαι ἠδυνήθη ὅτι τὸν Νάρκισσον ἐς Καμπανίαν, προφάσει ὡς καὶ τοῖς ὕδασι τοῖς ἐκεῖ πρὸς τὴν ποδάγραν χρησόμενον, προαπέπεμψεν.

Agrippina was able to do this deed owing to the fact that she had previously sent Narcissus off to Campania, feigning that he needed to take the waters there for his gout. (trans. E. Cary)

Dio Cassius 66.17.1

Ταῦτα μὲν οὕτως ἔσχεν, Οὐεσπασιανὸς δέ, ὡς μὲν ἡ ἀλήθεια ἔχει, νοσήσας οὐ τῇ συνήθει ἀλλὰ πυρετοῖς μετήλλαξεν ἐν τοῖς ὕδασι τῶν Σαβίνων τοῖς κουτιλίοις ὠνομασμένοις.

It was after the events just narrated that Vespasian fell sick, not, if the truth be known, of his accustomed gout, but of a fever, and passed away at Aquae Cutiliae in the Sabine country. (trans. E. Cary)

Dio Cassius 66.26.1

ἀλλὰ τῷ ἐπιγιγνομένῳ ἔτει, ἐπί τε τοῦ Φλαουίου καὶ ἐπὶ τοῦ Πωλίωνος τῶν ὑπάτων, καθιερώσας ὅσα εἴρηται, μετήλλαξεν ἐν τοῖς ὕδασιν εν οἷς καὶ ὁ πατὴρ αὐτοῦ

But in the next year, in the consulship of Flavius and Pollio, after the dedication of the buildings mentioned, he passed away at the same watering-place that had been the scene of his father's death. (trans. E. Cary)

Diodorus Siculus 4.22.1

κεῖται μὲν οὖᾳ ἡ λίμνη μεταξὺ Μισηνοῦ καὶ Δικαιαρχείων, πλησίον τῶν θερμῶν ὑδατων.

Now this lake lies between Misenum and Dicaearcheia near the hot waters....(trans. C.H. Oldfather, *LCL*, 1933)

Diodorus Siculus 5.10.1

Λείπεται δ᾽ ἡμῖν περὶ τῆς τῶν Λιπαραίων πόλεως τὰς αἰτίας ἀποδοῦναι, δι᾽ ἃς ἐν τοῖς ῞στερον χρόνοις ἔλαβεν αὔξησιν οὐ μόνον πρὸς εὐδαιμονίαν, ἀλλὰ καὶ πρὸς δόξαν. αὕτη γὰρ λιμέσι τε καλοῖς ὑπὸ τῆς φύσεως κεκόσμηται καὶ θερμοῖς ὕδασι τοῖς διαβεβοημένοις· οὐ μόνον γὰρ πρὸς ὑγίειαν τῶν νοσούντων τὰ κατ᾽ αὐτὴν λουτρὰ πολλὰ συμβάλλεται, ἀλλὰ καὶ κατὰ τὴν τῶν θερμῶν ὑδάτων ἰδιότητα παρέχεται τέρψιν καὶ ἀπόλαυσιν οὐ τὴν τυχοῦσαν. διόπερ πολλοὶ τῶν κατὰ τὴν Σικελίαν ὑπὸ νόσων ιδιοτρόπων ἐνοξλούμενοι καταντῶσιν είς αὐτήν, καὶ τοῖς λουτροῖς χρώμενοι παραδόξως ὑγιεῖς καθίστανται.

It remains for us now, as regards the city of the Liparians, to give an explanation of the causes why in later times it grew to a position, not only of prosperity, but even of renown. These, then, are the reasons: The city is adorned by nature with excellent harbours and springs of warms water which are famed far and wide; for not only do the baths there contribute greatly to the healing of the sick, but they also, in keeping with the peculiar property of such warm springs, provide pleasure and enjoyment of no ordinary kind. Consequently, many people throughout Sicily who are afflicted by illnesses of a peculiar nature come to the city and by taking the baths regain their health in a marvellous manner. (trans. C.H. Oldfather)

Florus ***Anth. Lat.*** 99

See Chapter 7, note 43.

Florus ***Anth. Lat.*** 108

Aspice fulgentis tectis et gurgite baias,/ dant quibus <h>aut parvum pictor et unda decus./ namque gerunt pulchras splendentia culmina formas,/ blandaque perspicuo fonte fluenta cadunt./ gaudia qui gemino gestit decerpere fructu/et vita nobit praetereunte frui,/ hic lavet; hic corpus reparans mentemque relaxans,/ lumina picturis, membra fo<ve>bit aquis.

Look at the spa with shining roofs and stream, to which a painter and the waters give glory not at all small. For the shining heights show beautiful forms, and pleasures flowing from a clear stream tumble down. He who desires to gather joys from double pleasure and knows how to delight in life passing by, here he bathes; here refreshing his body and relaxing his mind, his eyes by pictures, he will lather his limbs with water.

Florus ***Anth. Lat.*** 109

See Chapter 7, note 39.

Florus ***Anth. Lat.*** 110

Quisquis Cumani lustravit litoris antra/atque hospes calidis saepe natavit aquis,/ hic lavet, insani vitans discrimina ponti;/ Baiarum superant balnea nostra decus.

Whoever has washed himself at the caves of the Cumaean shore and as a guest has swum frequently in the hot springs, here let him wash, avoiding the dangers of the stormy sea; our baths surpass the glory of Baiae.

Florus ***Anth. Lat.*** 111

Flammea perspicuis c<o>eunt hic lumina lymphis/ dantque novum mixti Phoebus et unda diem./ denique succedit nostris lux tanta lavacris/ ut cernas nudos erubuisse sibi.

Fiery lights come together with clear springs and Phoebus and water united give a new day. In short so much light comes into our baths that you may perceive that naked bodies are reddened by it.

Florus ***Anth. Lat.*** 112

Infundit nostris Titan sua lumina bais/inclusumque tenet splendida cella iubar./ subiectis caleant aliorum balnea flammis;/ haec reddi poterunt, Phoebe, vapora tuis.

Titan pours his light into our spas and enclosed light fills the shining rooms. May baths of others be heated by flames underneath: these vapours are able to be given over, Phoebus, by your flames.

Florus ***Anth. Lat.*** 113

Delectat variis infundere corpora lymphis/et mutare vagis saepe fluenta libet./ nam ne consuetae pariant fastidia thermae,/ hinc iuvat alterno tingere membra lacu.

It is delightful to pour over bodies with many springs and it is agreeable to frequently change streams with oceans. For here it pleases to dip the limbs in another pool so that the usual baths might not give way to contempts.

Florus ***Anth. Lat.*** 168

See Chapter 7, note 41.

Florus *Anth. Lat.* 169

See Chapter 7, note 41.

Fronto Ad M. Caes. 1.3.4

Baiarum ego calidos specus malo quam istas fornaculas balnearum, in quibus ignes cum sumptu atque fumo accenditur brevique extinguitur. At illi ingenui vapores puri perpetuique sunt grati pariter et gratuiti.

Fronto to his own Caesar. To me the hot grottoes of Baiae are better than your bath-furnaces, in which the fire is kindled with cost and smoke, and anon goes out. But the natural heat of the former is at once pure and perpetual, as grateful as it is gratuitous. (trans. C.R. Haines, *LCL*, 1919, reprint 1982)

Galen *De morborum causis liber* (Kühn VII.18)

καὶ μὲν δὴ καὶ τὰ προσπίπτοντα ἔξωθεν αὐτῷ φάρμακά τε καὶ υδατα φαρμακώδη καὶ ψυχρὰ καὶ αὐτὸ τὸ περιέχον ἤτοι στέγνωσιν, ἢ μάνωσιν ἄμετρον ἐναπεργάζεσθαι δυνήσεται τῷ μορίῳ.

Indeed those medicated waters which fall on the outside of the body, either medicated or cold waters, and the surrounding air itself, are able to produce either constipation or excessive laxness in the body part.

Galen *De tremore palpitatione convulsione et rigore liber* (Kühn VII.600-601)

διὰ τοῦτο καὶ τὰ ἰάματα τῶν παλμῶν οἱ παλαιοὶ τῶν ἰατρῶν ἐξεῦρον, ὅσα λεπτύνειν τε καὶ θερμαίνειν δύναται, οἷά ἐστι τά τε δὶ εὐφορβίου, καὶ πυρέθρου, καὶ λιμνησίας, καὶ θείου, καὶ πεπέρεως, ὅσα τε ἄλλα τοιαῦτα συγκείμενα φάρμακα, καὶ τῶν ὑδάτων δὲ τὰ γῆθεν ἀνιόντα θερμὰ, καὶ τούτων μάλιστα τὰ νιτρώδη τε καὶ θειώδη, καὶ ἀσφαλτώδη τε ταῦτα ἐπαινοῦσι. χρῶνται δὲ καὶ θαλάττη, θερμαίνοντεσ αὐτὴν, καὶ ἅλμῃ, εἰ θάλαττα μὴ παρείη.

Therefore even old doctors discovered remedies of palpitations, which they are able to lessen and to make warm; in a certain way some regular remedies are this kind, those which are derived from euphoribius, pyrethrus, limnesia, sulphur and pepper; also among waters which flow forth hot from the earth, and from these especially they approve waters of nitre, sulphur, and bitumen. But they also use sea water, having been heated, and brine, if sea water is lacking.

Galen *De method medendi* (Kühn: X.535)

Ἐλέχθη γοῦν ἐν ἐκείνοις τοῖς σώμασιν ἡ στέγνωσις ἐργαζομένη πυρετὸν, ἐν οἷς ἐστι τὸδιαπνέμενον οὐκ ἀτμῶδες οἷόν περ ἐν τοῖς εὐχύμοις, ἀλλὰ δακνῶδες καὶ δριμὺ καὶ καπνῷ παραπλήσιον ἢ λιγνύϊ τούτοις οὖν τοῖς σώμασιν ὑγιεινότατα μὲν λουτρὰ γλυκέων ὑδάτων εὐκράτων καὶ τρίψις ἀραιωτικὴ καὶ γυμνάσια σύμμετρα καὶ δίαιτα φλυκύχυμοσ, ἐναντιώτατα δὲ λουτρὰ ψυχρὰ καὶ στυπτηριώδη καὶ ἀλουσία καὶ γυμνάσιον ὀξὺ καὶ τρίψις ἤτοι μηδ᾽ ὅλως ἢ σκληρὰ γινομένη καὶ δίαιτα κακόχυμος, ἀγρυπνία τε καὶ θυμὸς καὶ λύπη καὶ φροντὶς, ἔγκαυσίς τε καὶ κόπος.

For it is said in these bodies fever excites the crowding of the nerves, through which what breathes is not breath, in the manner it seems in them, which are good medicines, but biting and sharp, not unlike with some and lightening. Therefore for these bodies, a modest wash with fresh water is very healthful, then a rubbing-down which makes it thin, and gentle exercises and food which completes the sweet draught. But a cold and alum bath is very disadvantageous, abstinences from bathing and from hard exertion; and rubbing either completely none or hard, and food of unwholesome medications and watches and anger and sadness and concern, and cauterizing in the sun and exhaustion.

Galen *Method medendi liber VIII* (Kühn: X.536)

ἐγὼ γοῦν ἑάσας ἅπαντας τοὺς ἄλλους ἀναμνήσω σε τοῦ λουσαμένου μὲν ἐν τοῖς στυπτηριέδεσιν ὕδασιν, ἃ καλοῦσιν Ἄλβουλα, πυκνωθέντος δ'ἐκ τούτου τὸ δέρμα, κἄντευθεν ἀρξαμένου πυρέττειν, ἀρκέσει γὰρ ἕνεκα σαφηνείας οὗτος οἷον παράδειγμά τι τοῦ λόγου γενέσθαι.

For I will recall for you, when all the remaining things were neglected, him who in alum springs, which they call Albula, he bathed, and from this with this skin having been thickened, afterwards he began to have a fever; for this satisfies from the clarity of our discussion just as an example.

Galen *De sanitate tuenda liber quartus* (Kühn VI.423)

εἰ γρὰ ὑπὸ θερμῆς δυσκρασίας ἡ κεφαλὴ κακὸν ἴσχει, βλαβερὰ τὰ τοιαῦτα θάρμακα. χρὴ τοίνυν αὐτοὺς λουτροῖς πολλοῖς ποτίμων ὑδάτων παρηγορεῖν, διαφοροῦντάς τε ἅμα τοὺς ἐν τῇ κεφαλῇ γενομένουφ ἀτμοὺς θερμούς, καὶ τὴν δρᾶσιν ὅλην ἐργαζομένους βελτίω. Βλαβερὰ δὲ τούτοις ἡ τῶν αὐτοφυῶν θερμῶν ὑδάτων χρῆσις. ὅσα μὲν γὰρ αὐτῶν θειώδη τέ ἐστι καὶ ἀσφαλτώδη, τῷ θερμαίνειν ἐναντιώιατα ταῖς φύσει θερμαῖς κεφαλαῖς, ὅσα δὲ στυπτηριώδη, τῷ στεγνοῦν. μόνοιφ δ' ἂν, εἴπερ ἄρα, τοῖς φλυκέσι τῶν αὐτοφυῶν ὑδάτων ἀβλαβῶς χρῷντο. τοῦτο γὰρ ἀσπαλὲς εἰπεῖν, ὡς τό γέ τι καὶ ὠφελεῖσθαι παρ' αὐτῶν οὐχ ὁμοίως ἀσφαλές.

For if the head is made bad by a hot bad temperament, such type of medicine is harmful. Then it is necessary to advise them with many baths of fresh/sweet water, and at the same time, to pour water which is becoming hot steam on the head, and the entire mixture will be made better. The power of naturally heated waters is harmful for them. For how many of them are sulphur and bitumen, it is most contrary to the head which is hot by nature to heat, but as many as are alum, so many are covered. If therefore, they should use sweet waters only of a natural spring, they may be unharmed. For this is said to be safe, since something is helped by the same things is not equally safe.

Galen *De simplicium medicacamenturum temperamentis ac facultatibus liber I* (Kühn XI.392)

οὐχ ἧττον δ' ἅλμης καὶ θαλάττης τὰ θειώδη καὶ ἀσφαλτώδη, νιτρώδη καὶ χαλκάνθου καὶ μίσυος καὶ χαλκίτεως, ἤ τινος ἁπλῶς τῶν φύσει θερμῶν φαρμάκων ἐμφαίνοντος τῇ γεύσει, πολέμια πάντα ταῖς θερμαῖς τοῦ σώματος ἡμῶν διαθέσεσιν ὑπάρχει.

Thus far there is much variety between water drinks and brine and sea water; moreover equally brine and sea water and sulphur and bitumen and nitrum waters and those [??] , or another simply from nature by a taste they consider of a hot medication, all are harmful for those having been weakened by the heat of our body.

Galen *De simplicium medicacamenturum temperamentis ac facultatibus liber I* (Kühn XI.393)

τὰ μέντοι στυρτηριώδη τῶν ὑδάτων, οἷον τὰ κατὰ τὴν Ἰταλίαν Ἄλβουλα προσαγορευόμενα, καὶ τοῖς ἄλλοις μὲν ἕλκεσίν ἐστιν ἐπιτήδεια καὶ τὰ ῥευματικὰ δὲ πάντα ξηραίνει ῥᾳδίως. οὕτως ἄρα τῶν ἄλλων ὑδάτων οὐδὲν ὑγραίνειν πέφυκεν, ὅτι μηδ' ὕδωρ ἐστὶν ἀκριβῶς, ἀλλ' ἐπίμικτον τε καὶ νοθον ἤτοι στυπτηρίας τε καὶ χαλκίτεως, ἢ ἁλῶν, ἤ τινος ἄλλου τοιούτου προσειληφός. ὅθεν αὐτῶν ἔνια παροξυντικὰ τῶν ἑλκῶν ἐστιν, ὅσα τε δριμέα ἱκανῶς ὑπάρχει καί δακνώδη. καὶ μὲν δὴ καὶ διψῶντι τὸ μὲν ὕδωρ παρηγορικὸν ἴαμα, τὰ δ' ἄλλα πάντα παροξυντικὰ, καὶ τοῖς ὑδερικοῖς ἐναντιώτατον μὲν καὶ πόμα λουτρὸν τὸ ὕδωρ τὸ γλυκὺ τὰ δ' ἁληυρώδη καὶ νιτρώδη καὶ θειώδη καὶ ἀσπαλτώδη πάντα χρηστά· καὶ μιμήσασθαι δ' ἂν δύναιο, καθάπερ θάλατταν, οὕτω καὶ τῶν ἄλλων ἕκαστωον ἐπιμιξίᾳ τῆς οὐσίας, ἥτις ἂν ἐν ἑκάστῳ φαίνηται κρατεῖν. θεῖον μὲν γὰρ ἐμβαλὼν ὕδατι γλυκεῖ θειῶδες ὕδωρ ἐργάσῃ, στυπτηρίαν δὲ στυπτηριῶδες, καὶ τῶν ἄλλων ἕκαστον.

But alum waters, such as those in Italy called Albula, are useful wounds and all fluxes dry up easily. Thus none of the other waters is able to moisten, because it is not exactly water, but mixed and adulterated, having received either alum and copper, or salt, or some other sort. Wherefore some of these also irritate wounds, certainly those which are quite sharp and biting. But even for one thirsting, sweet water is a remedy as it appeases; indeed the others leave a sharp thirst untouched. Then sweet water both as a drink and a bath is very harmful for those exerting themselves; indeed salt and nitrum and sulphur and bitumen waters are all very useful. Moreover just as it is possible that sea water is imitated, thus however much of the others, the resource having been mixed is evident, which seems to overcome which; for you will made sulphurous water when sulphur is added to fresh water; alum when aluminum is added, and in each the same.

Galen ***De simplicium medicacamenturum temperamentis ac facultatibus liber I*** (Kühn XI.387)

οὐ μὴν τῶν ἄλλων γε ὑδάτων τῶν αὐτοφυῶν, ὅσα δὴ θειώδη τε καὶ ἀσφαλτώδη καὶ νιτρώδη ταῖς ποιοτησίν ἐστιν, ἡ αὐτὴ δύναμις· οὐδὲν γὰρ αὐτῶν ὅταν ἐπικτήτου θερμότητος ἢ φυχρότητος χωρισθὲν προσφέρηται, ψύχειν φαίνεται.

But there is not this power of other natural waters, which sulphur, bitumen, and nitrum represent by their qualities. For none of these, when applied by another person without hotness or coldness, was seen to chill.

Galen ***Hippocratis epidem. VI. et Galeni in illum commentarius IV. sectio IV.*** (Kühn XVII/2.155)

λέγω δ' ἄμεμπτον τὸ μήτ' ἰλύος ἔχον τε μήτε φυσῶδες, ἀποιότατόν τε γευομένοις. ἔνια γὰρ ἀτύπους ἐπιμεμιγμένας ἔχει ποιότητας, ἁλῶν ἢ λίτρου ἢ θείου τε καὶ ἀσφάλτου καὶ στυπτηρίας ἑτέρων τε τοιούτων.

Moreover I say the best water is lacking from all blemish which neither has any mud nor smells badly nor has any quality before it by tasting. For some have a few allowable qualities, the kind with salt, or nitrum, or sulphur, or bitumen, or alum.

Galen ***Hippocrates aphorismi et galeni in eos commentarii*** (Kühn XVII/2.657)

ἐκ τῶν τοιούτων δ' ἐστὶ κενώσεων ἥ τε διὰ μήτρας κα ἰή δ αἱμοίῤῥοΐδων, ἥ τ' ἐπὶ τοῖφ γυμνασίοις καὶ τρίψεσι καὶ πάσῃ κινήσει τε καὶ ἀλέᾳ καὶ λουτροῖς θερμοῖς καὶ μάλιστα εἰ νιτρώδη καὶ θειώδη καὶ ἀσφαλτώδη τύχῃ καὶ κατὰ συμβεβηκὸς ἡ ἀσιτία. τὰ γὰρ τουαῦτα πάντα δοκεῖ μὲν ὁμοτίμως ὅλον τὸ σῶμα κενοῦν.

Also in the same manner there is evacuation which is made through the womb, which is made through haemorrhoids, through exercise, rubbings, all movement, and which is done by warm or hot baths, especially if they are nitrum or sulphur or bitumen and from fasting happening. Indeed all these things seem equally able to entirely clear the body.

Hippocrates ***De aere aquis locis*** 7.48-57

δεύτερα δὲ ὅσων εἶεν αἱ πηγαὶ ἐκ πετρέων - σκληρὰ γὰρ ἀνάγκη εἶναι - ἢ ἐκ γῆς, ὅκου θερμὰ ὕδατα ἐστιν, ἢ σίδηρος γίνεται ἢ χαλκὸς ἢ ἄγρυρος ἢ χρυσὸς ἢ θεῖον ἢ στυπτηρίη ἢ ἄσφαλτον ἢ νίτρον. ταῦτα γὰρ πάντα ὑπὸ βίης γίνονται τοῦ θερμοῦ. οὐ τοίνυν οἷόν τε ἐκ τοιαύτης γῆς ὕδατα ἀγαθὰ γίνεσθαι, ἀλλὰ σκληρὰ καὶ καυσώδεα διουρεῖσθαί τε χαλεπὰ καὶ πρὸς τὴν διαχώρησιν ἐναντία εἶναι.

The next worst will be those whose springs are from rocks - for they must be hard - or from earth where there are hot waters, or iron is to be found, or copper, or silver, or gold, or sulphur, or alum, or bitum, or soda. For all these result from the violence of the heat. So from such earth good waters cannot come, but hard, heating waters, difficult to pass and causing constipation. (trans. W.H.S Jones, *LCL*, 1934)

Horace *Ep.* 1.15

nam mihi Baias/ Musa supervacuas Antonius, et tamen illis/ me facit invisum, gelida cum perluor unda/ per medium frigus. sane murteta relinqui,/ dictaque cessantem nervis elidere morbum/ sulfura contemni, vicus gemit, invidus aegris, qui caput et stomachum supponere fontibus audent/ Clusinis Gabiosque petunt et frigida rura./ mutandus locus est et deversoria nota praeteragendus equus. "quo tendis? non mihi Cumas/ est iter aut Baias.

For Antonius Musa makes Baiae useless for me, and yet there he makes me unwelcome, when I wash myself with cold water in the middle of winter. Indeed the town laments the abandoned myrtles and the sulphur baths despised, said to drive out from the nerves lingering disease, who dares to place his head and stomach under the springs at Clusium and seeks Gabii and the cold land. The place ought to be changed and I must drive my horse by known lodgings. "Where do you go? Cumae nor Baiae is the place for me."

Josephus *AJ* 18.248-249

καὶ προσέπλευσαν ἀμφότεροι Δικαιαρχεᾳ καὶ τὸν Γάιον ἐν Βαΐαις λαμβάνουσιν. πολύδριον δ᾽ ἐστὶ καὶ τοῦτο τῆς Καμπανίας ὅσον ἀπὸ σταδίων πέντε τῆς Δικαιαρχείας κείμενον, βασίλειοί τέ εἰσιν οἰκήσεις αὐτόθι πολυτελέσι κεχρημέναι κατασκευαῖς φιλοτιμηθέντος τῶν αὐτοκρατόρων ἑκάστου τοὺς προγεγονότας ὑπερβάλλεσθαι, λουτρά τε παρέχεται τὸ χωρίον θερμὰ γῆθεν αὐτόματα ἀνιέντα ἀγαθὰ ἐπί τε ἰάσει τοῖς χρωμένοις καὶ ἄλλως τῷ ἀνειμένῳ τῆς διαίτης συμφέροντα.

Both of them had made port at Dicaearchia and had found Gaius at Baiae. This is a little city in Campania situated at a distance of about five furlongs from Dicaearchia. There are royal residences there lavishly furnished, for each of the emperors was ambititious to outdo his predecessors. The locality also affords hot baths, which spring naturally from the ground and have a curative value for those who use them, not to mention their contribution to easy living in other ways. (trans. L.H. Feldman, *LCL*, 1926)

Livy 22.1.10

et aquas Caeretes sanguine mixtas fluxisse fontemque ipsum Herculis cruentis manasse respersum maculis

and the Caeretean waters flowed mixed with blood and the fountain of Hercules itself sprinked with spots flowed with blood

Livy 22.13.10

Usque ad aquas Sinuessanas populatio ea pervenit.

And the devastation spread also to Aquae Sinuessanae.

Livy 22.36.7

Nam et Romae in Aventino et Ariciae nuntiatum erat sub idem tempus lapidibus puvisse, et multo cruore signa in Sabinis, Caere aquas fonte calido manasse-id quidem etiam, quod saepius acciderat, magis terrebat .

For a shower of stones had been reported as having fallen at Rome on the Aventine, and about the same time at Aricia; in the Sabine country the images of the gods, and at Caere the waters that flowed from the hot spring had been drenched with blood a prodigy all the more alarming from its having occurred so often. (trans. R.O. Foster, *LCL*, 1953)

Livy 41.16.3

Accesserat ad religionem, quod Cn. Cornelius conusl ex monte Albano rediens concidit et, parte membrorum captus ad Aquas Cumanas profectus ingravescente morbo Cumis decessit.

It added to their religious (fear), that Cn. Cornelius the consul returning from the Alban Mount fell, and suffering in some of his limbs having set out for Aquae Cumanae he died at Cuma when the disease grew worse.

Lucretius 6.747-748

is locus est Cumas aput, acri sulpure montes/ oppleti calidis ubi fumant fontibus aucti.

Such a place is close by Cumae, where mountains, filled with rank sulphur, smoke, all covered with hot springs. (trans. W.H.D. Rouse, *LCL*, 1931)

Martial 1.12.2

canaque sulphureis Albula fumat aquis

and grey Albula smoked with sulphur waters

Martial 1.59

Dat Baiana mihi quadrantes sportula centum./ inter delicias quid facit ista fames?/ redde Lupi nobis tenesbrosaque balnea Grylli,/ tam male cum cenem cur bene Flacce laver?

The sportula at Baiae gives me one hundred quadrantes. What is such poverty doing among delights? Return to us the dark baths of Lupus and Gryllus. When my dinner's this bad, why should my bath be good? (adapted from D.R. Shackleton Bailey, *LCL*, 1993)

Martial 1.62.4-6

dum modo Lucrino, modo se permittet Averno/ et dum Baianis saepe fovetur aquis,/ incidit in flammas: iuvenemque secuta relicto/ coniuge Penelope venit, abit Helene

But as she trusted herself to the Lucrine or anon to Avernus and often let the waters of Baiae relax her, she fell into the furnace and left her husband for a younger man. Arriving Penelope, she departed Helen. (trans. D.R. Shackleton Bailey)

Martial 4.57.5-10

horrida sed fervent Nemeaei pectora monstri, / nec satis est Baias igne calere suo. ergo sacri fontes et litora grata valete, Nympharum pariter Nereidumque domus. Herculeos colles gelida vos vincite bruma, nunc Tiburtinis cedite frigoribus.

But the shaggy breat of the Nemean monster glows and 'tis not enough that Baiae is hot with her own fire. Therefore, sacred springs and beloved shores, home of Nymphs and Nereids alike, fare you well. Beat the hills of Hercules in winter's cold, but now yield to Tibur's chill. (trans. D.R. Shackleton Bailey)

Martial 5.1.6-9

...sive salutiferis candidus Anxur aquis,/ mittimus, o rerum felix tutela salusque, sospite quo gratum credimus esse Iovem ...

...o gleaming Anxur with her health-giving waters, o blest protector and savior of the world, whose safety assures us of Jove's gratitude... (trans. D.R. Shackleton Bailey)

Martial 6.42

Etrusci nisi thermulis lavaris / illotus morieris, Oppiane./ nullae sic tibi blandientur undae / non fontes Aponi rudes puellis,/non mollis Sinuessa fervidique / fluctus Passeris aut superbus Anxur / non Phoebi vada principesque Baiae./ nusquam tam nitidum vacat serenum: / lux ipsa est ibi longior, diesque / nullo tardius a loco recedit. / Illic Taygeti virent metalla / et certant vario decore saxa, / quae Phryx et Libys altius cecidit. / Siccos pinguis onyx anhelat aestus / et flamma tenui calent ophitae : / ritus si placeant tibi Laconum, / contentus potes arido vapore / cruda Virgine Marciave mergi ; quae tam candid, tam serena lucet / ut nullas ibi suspiceris undas / et credas vacuam nitere lygdon. / Non adtendis et aure me supina / iam dudum quasi neglegenter audis : / inlotus morieris, Oppiane.

Unless you will bathe in the little baths of Etruscus, Oppianus, you will die unbathed. No waters will please you thus, not the springs of Aponus ignorant of girls, not soft Sinuessa and the hot waves of Passer or proud Anxur, nor the shallows of Phoebus or Baiae the paramount. Nowhere is the clear, open sky so bright. The very light stays longer there, from no place does the day depart more slowly. There the quarries of Taygetus are green and stones which the Phrygian and the Libyan have deeply hewn contend in varied beauty. Sleek alabaster breathes arid heat and snakestones are warm with slender flame. If you like the Laconian style, having satisfied yourself with dry warmth, you can plunge into the native Virgin or Marcia, so bright, so clear and transparent that you would not suspect any water there, you would think the shining lygdus was empty. You pay no attention and hear me this while with languid ear, seeming not to care. You will die unbathed, Oppianus. (trans. D.R. Shackleton Bailey)

Martial 6.43

Dum tibi felices indulgent, Castrice, Baiae / canaque sulphureis nympha natatur aquis, / me Monentani confirmant otia ruris / et casa iugeribus non onerosa suis. / hoc mihi Baiani soles mollisque Lucrinus, / hoc mihi sunt vestrae, Castrice, divitiae. / quondam laudatas quocumque libebat ad undas / currere nec longas pertimuisse vias; / nunc urbis vicina iuvant facilesque recessus, / et satis est pigro si licet esse mihi.

While happy Baiae indulges you, Castricus, and you swim in water white with sulphur springs, the ease of Nomentan farm and a cottage not oppressive to its acres restores me. This is for me the sunshine of Baiae and soft Lucrine, this is for me, Castricus, your rich men's resorts. Time was when I would gladly run anywhere I fancied to fashionable waters, had no fear of long journeys. But nowadays I like places near the city, retreats within easy reach; it's enough if I can be lazy. (trans. D.R. Shackleton Bailey)

Martial 6.47

Nympha mei Stellae quae fonte domestica puro/ laberis et domini gemmea tecta subis,/ sive Numae coniunx Triviae te misit ab antris/ sive Camenarum de grege nona, veni:/ exolvit votis hac se tibi virgine porca/ Marcus, furtivam quod bibit aeger aquam./ tu contenta meo iam crimine gaudia fontis/ da secura tui: sit mihi sana sitis.

Nymph, gliding with pure fount in my Stella's home and entering beneath its master's jewelled roof, whether Numa's wife sent you from Trivia's grot or one of the nine Camenae, come hither. With the virgin porker does Marcus absolve himself to you of his vow, because in sickness he furtively drank your water. Be content with my offense and grant me safe joy of your stream; let my thirst be healthy. (trans. D.R. Shackleton Bailey)

Martial 9.58.1-4

Nympha sacri regina lacus, cui grata Sabinus/ et mansura pio munere templa dedit,/ sic montana tuos semper colat Umbria fontes/ nec tua Baianas Sassina malit aquas:

Nymph, queen of the sacred lake, to whom Sabinus gave a thanks temple and coming from pious gift, thus may hillly Umbria always honour your springs and may not your Sassina prefer the Baian waters. (trans. D.R. Shackleton Bailey)

Martial 10.51.7-10

O nemus, o fontes solidumque madentis harenae/ litus et aequoreis splendidus Anxur aquis./ et non unius spectator lectulus undae,/ qui videt hinc puppes fluminis, inde maris!

Ah wood and fountains and the firm shore of moist sand and Anxur gleaming in her sea waters and the couch that gazes on double wave, seeing on one side river craft, on the other marine! (trans. D.R. Shackleton Bailey)

Martial 10.58.1-2

Anxuris aequorei placidos, Frontine, recessus/ et propius Baias litoreamque domum

When I dwelt in the calm retreat of Anxur by the sea and a Baian villa closer to Rome, a house on the shore.... (trans. D.R. Shackleton Bailey)

Martial 11.7

Iam certe stupido non dices, Paula, marito, / ad moechum quotiens longius ire voles, / 'Caesar in Albanum iussit me mane venire, / Caesar Circeios.' iam stropha talis abit....quas igitur fraudes ingeniosa paras? / diceret hystericam se forsitan altera moecha / in Sinuessano velle sedere lacu....

Now at least, Paula, you will not be saying to your fool of a husband, whenever you want to go to a lover at a distance: "Caesar has commanded me to go to Alba tomorrow morning. Caesar has commanded me to Circeii," The day for such a ruse has gone by.....So, my clever one, what fraud are you hatching? Perhaps another of your kind might say she was hysterical and wanted to sit in the waters of Sinuessa.... (trans. D.R. Shackleton Bailey)

Martial 11.80

Litus beatea Veneris aureum Baias, / Baias superbae blanda dona Naturae, / ut mille laudem, Flacce, versibus Baias, / laudabo digne non satis tamen Baias. / sed martialem malo, Flacce, quam Baias. / optare utrumque pariter improbi votum est, / quod si deorum munere hoc mihi detur, / quid gaudiorum est Martialis et Baiae!

Baiae, golden shore of happy Venus, Baiae, proud nature's beguiling gift, though I praise Baiae in a thousand verse, Flaccus, I shall never praise Baiae as Baiae deserves. But, Flaccus, I want Martialis more than Baiae. To ask for both together would be a presumptious prayer. Yet if this were granted me by a gift of the gods, what bliss - Martialis and Baiae! (trans. D.R. Shackleton Bailey)

Martial 11.82

A Sinuessanis conviva Philostratus undis / conductum repetens nocte iubente larem / paene imitatus obit saevis Ilpenora fatis, / praeceps per longos dum ruit usque gradus. / non esset, Nymphae, tam magna pericula passus / si potius vestras ille bibisset aquas.

As Philostratus was returning at night's behest from a dinner party at the baths of Sinuessa to his rented lodging, he almost copied Elpenor and lost his life by a cruel fate, plunging down a long flight of steps. Nymphs, he would not have endured so great a peril if he had drunk your waters instead. (trans. D.R. Shackleton Bailey)

Ovid *Fasti* 1.267

Cum tanto veritus committere numine pugnam/ ipse meae movi callidus artis opus, / oraque, qua pollens ope sum, fontana reclusi/ sumque repentina eiaculatus aquas; / ante tamen madidis subieci sulphura venis,/ clauderet ut Tatio fervidus humor iter.

Fearing to engage in fight with so redoubtable a deity, I slyly had recourse to a device of my own craft, and by the power I wield I opened the fountains' mouths and spouted out a sudden gush of water; but first I threw sulphur into the water channels, that the boiling liquid might bar the way against Tatius. (trans. J.G. Frazer, *LCL*, 1931)

Ovid *Meta.*15.713

hinc calidi fontes

here the hot springs (at Baiae)

Pausanias 4.35.12

πῶς δ᾽ ἂν οὐκ ἀποδεξαίμεθα ἀληθεύειν αὐτῷ τὸν λόγον, ὅπου γε καὶ ἐφ᾽ ἡμῶν ἐν Δικαιαρχίᾳ τῇ Τυρρηνῶν ἐξεύρηται ὕδωρ σφίσι θερμὸν οὕτω δή τι ὀξὺ ὥστε τὸν μόλυβδον - διεξήει γὰρ διὰ μολύβδου ῥέον -ἔτεσι κατέτηξεν οὐ πολλοῖς.

We can assuredly admit the truth of his statement, when in our days at Dicaearchia (Puteoli), in the land of the Tyrrhenians, a hot spring has been found, so acid that in a few years it dissolved the lead through which its water passed. (W.H.S. Jones, *LCL*, 1918)

Pliny *Ep.* 8.8

Vidistine aliquando Clitumnum fontem?... Modicus collis adsurgit, antiqua cupressu nemorosus et opacus. Hunc subter exit fons et exprimitur pluribus venis sed imparibus....Ripae fraxino multa multa populo vestiuntur...Rigor aquae certauerit nivibus, nec color cedit. Adiacet templum priscum et religiosum. Stat Clitumnus ipse amictus ornatusque praetexta; praesens numen atque etiam fatidicum indicant sortes. Sparsa sunt circa sacella complura, totidemque di. Sua cuique veneratio suum nomen, quibus dam vero etiam fontes. Nam praeter illum ...sunt minores capite discreti... Balineum Hispellates, quibus illum locum divus Augustus dono dedit, publice praebent, praebent et hospitium...

Have you ever seen the Clitumnum spring... A small hill rises up, wooded and dense with old cypress; below it the spring rises spring rises and gushes out through several channels of unequal size.... The banks are covered with many ash trees and poplars.... The coldness of the water could contend with snow and the colour would not give ground. It comes near an ancient and holy temple. Clitumnus himself stands garbed and decorated in a toga; tallies show the god is present and is even prophetic. Many shrines are scattered around, and just as many gods. For each there is a name and a worship, and also for each there are springs. For beyond this there are smaller springs separated from the main source...The people of Hispellum, to whom divine Augustus gave this spot as a gift, provide a bath for the public and they provide lodgings....

Pliny *Ep.* 8.20

Exegerat prosocer meus, ut Amerina praedia sua inspicerem. Haec perambulanti mihi ostenditur subiacens lacus nomine Vadimonis; simul quaedam incredibilia narrantur. Perveni ad ipsum. Lacus est in similitudinem iacentis rotae circumscriptus et undique aequalis: nullus sinus, obliquitas nulla omnia dimensa paria...Color caerulo albidior; viridior et pressior; sulpuris odor saporque medicatus; vis qua fracta solidantur.

My wife's grandfather had asked me to look at his property in Ameria.While going round I was shown a lake at the foot of the hills called Lake Vadimon, and at the same time told some extraordinary facts about it. I went down to look at it, and found it was perfectly round and regular in shape, like a wheel lying on its side, without a single irregular bend or curve....It is subdued in colour, pale blue with a tinge of green, has a smell of sulphur and a mineral taste, and the property of healing fractures. (trans. B. Radice, London, 1963, reprint 1969)

Pliny *HN* 2.106.227

Sed fontium plurimorum natura mira est fervore, idque etiam in iugis Alpium ipsoque in mari inter Italiam et Aenariam in Baiano sinu et in Liri fluvio multisque aliis.... Patavinorum aquis calidis herbae virentes innascuntur, Pisanorum ranae, ad Vetulonios in Etruria non procul a mari pisces.

But the nature of many springs is wondrous because of the boiling temperatures, such as those in the Alps and those in the sea between Italy and Aenaria in the Bay of Baiae and those of the Liris river and many others.... Flourishing grasses grow in the hot springs of Patavinae, frogs in the springs of Pisanae, and fishes in the springs at Vetulonia in Etruria, not far from the sea. (trans. H. Rackham, *LCL*, 1938, reprint 1967)

Pliny *HN* 18.29.114

In eodem reperitur et sulpur, emicantque fontes Araxi oculorum claritati et volnerum medicinae dentiumque firmitati.

In the same hill sulphur is also found, and the springs of the Araxus which issue from it are efficacious for improving the skin, healing wounds and strengthening the teeth. (H. Rackham, *LCL*, 1950, reprint 1961)

Pliny *HN* 31.2

Emicant benigne passimque in plurimis terris alibi frigidae, alibid calidae, alibi iunctae... alibi tepidae egelidaeque, auxilia morborum profitentes et e cunctis animalibus hominum tantum causa erumpentes. augent numerum deorum nominibus variis urbesque condunt, sicut Puteolos in Campania, Statiellas in Liguria.... nusquam tamen largius quam in Baiano sinu nec pluribus auxiliandi generibus, aliae sulpuris vi, aliae aluminis, aliae salis, aliae nitri, aliae bituminis, nonnullae etiam acida salsave mixtura. vapore ipso aliquae prosunt tantaque est vis, ut balneas calefaciant ac frigidam etiam in solis fervere cogant. quae in Baiano Posidianae vocantur nomine accepto a Claudii Caesaris liberto obsonia quoquo percocunt. vaporant et in mari ipso quae Licinii Crassi fuere, mediosque inter fluctu existit aliquid valetudini salutare.

Everywhere in many lands gush forth beneficient waters, here cold, there hot,there both...in some places tepid and lukewarm, promising relief to the sick and bursting forth to help only men of all the animals. Water adds to the number of the gods by its various names, and founds cities, such as Puteoli in Campania, Statiellae in Liguria... Nowhere however is water more bountiful than in the Bay of Baiae nor with more variety of relief, some has the power of sulphur, some of alum, some of salt, some of soda, some of bitumen, some are even acid and salt in combination; of some the mere steam is beneficial, of which the power is so great that it heats baths and even makes cold water boil in the tubs.The water called Posidian in the region of Baiae, getting its name from a freedman of Claudius Caesar, cooks thoroughly even meat. In the sea itself, steam rises from the water that belonged to Licinius Crassus, and there comes something valuable to health in the very midst of the billows. (trans.W.H.S. Jones, *LCL*, 1938)

Pliny *HN* 31.3

Iam generatim nervis prosunt pedibusve aut coxendicibus, aliae luxatis fractisve, inaniunt alvos, sanant vulnera. capiti, auribus privatim medentur, oculis vero Ciceronianae. dignum memoratu, villa est ab Averno lacu Puteolos tendentibus inposita litora, celebrata porticu ac nemore, quam vocabat M. Cicero Academiam ab exemplo Athenarum.... huius in parte prima exiguo post obitum ipsius Antistio Vetere possidente eruperunt fontes calidi perquam salubres oculis, celebrati carmine Laureae Tulli, qui fuit e libertis eius.... ponam enim ipsum carmen: Quo tua, Romanae vindex clarissime linguae, / silva loco melius surgere iussa viret / atque Academiae celebratam nomine villam / nunc reparat cultu sub potiore Vetus, / hoc etiam apparent lymphae non ante repertae / languida quae infuso lumina rore levant. / nimirum locus ipse sui Ciceronis honori / hoc dedit, hac fontes cum patefecit ope. / ut, quoniam totum legitur sine fine per orbem, / sint plures oculis quae medeantur aquae.

To come now to the classes of water: some waters are good for sinews or feet, or for sciatica; others for dislocations or fractures; they purge the bowels; heal wounds; are specific for head, or for ears; while the Ciceronian are so for the eyes. It is worth while recording that there is a country seat on the coast as you go from Lake Avernus to Puteoli, with a famous portico and grove, which M. Cicero, copying Athens, called Academia.... In the front part of this estate, when the owner was Antistius Vetus, a short time after Cicero's demise there burst out hot springs, very beneficial for eye complaints, which have been made famous by a poem of Laurea Tullus, who was one of Cicero's freedmen.... For I will quote the actual poem...: O famous champion of our Latin tongue, where grows with a fairer green the grove you bade rise, and the villa, honoured by the name of Academe, Vetus keeps in repair under a more careful tendance, here are also to be seen waters not revealed before, which with drops infused relieve wearied eyes. For indeed the site itself gave this gift as an honour to Cicero its master, when it disclosed springs with this healing power, so that, since he is read throughout the whole world, there may be more waters to give sight to eyes. (trans.W.H.S. Jones)

Pliny *HN* 31.4

In eadem Campaniae regione Sinuessanae aquae sterilitatem feminarum et virorum insaniam abolere produntur.

In Campania too are the waters of Sinuessa, which are said to cure barrenness in women and insanity in men. (trans.W.H.S. Jones)

Pliny *HN* 31.5

in Aenaria insula calculosis mederi, et quae vocatur Acidula ab Teano Sidicino IIII p. haec frigida, item in Stabiano quae Dimidia vocatur.... idem contingit in Velino lacu potantibus....

The waters in the island of Aenaria are said to cure stone in the bladder, as does also the water called Acidula-it is a cold one-four miles from Teanum Sidicinum, that at Stabiae called Dimidia.... The same result comes from drinking the water of Lake Velia.... (trans.W.H.S. Jones)

Pliny *HN* 31.6

Iuxta Roman Albulae aquae volneribus medentur, egelidae hae, sed Cutiliae in Sabinis gelidissimae suctu quodam corpora invadunt, ut propre morsus videri possit, aptissimae stomacho, nervis, universo corpori

Near Rome the waters of Albula heal wounds. These are lukewarm, but those of Cutilia of the Sabines are very cold, penetrating the body with a sort of suction, so that they might seem almost to bite, being very healthful to the stomach, the sinews, and the whole body. (trans. W.H.S. Jones)

Pliny *HN* 31.8

...Leucogaei fontes inter Puteolos et Neapolim oculis et vulneribus medentur....

White Earth springs between Puteoli and Naples is good for complaints of the eyes and for wounds.

Pliny *HN* 31.32

Homerum calidorum fontium mentionem non fecisse demiror, cum alioqui lavari calida frequenter induceret, videlicet quia medicina tunc non erat hae quae nunc aquarum perfugio utitur. est autem utilis sulphurat nervis, aluminata paralyticis aut simili modo solutis, bituminata aut nitrosa, qualis Cutilia est, bibendo atque purgationibus. plerique in gloria ducunt plurimis horis perpeti calorem earum, quod est inimicissimum, namque paulo diutius quam balineis uti oportet, ac postea frigida dulci, nec sine oleo discedentes, quod vulgus alienum arbitratur, idcirco non alibi corporibus magis obnoxiis, quippe et vastitate odoris capita replentur et frigore infestantur sudantia, reliqua corporum parte mersa. similis error, quam plurimo potu gloriantur. vidique iam turgidos bibendo in tantum ut anuli integerentur cute, cum reddi non posset hausta multitudo aquae. nec hoc ergo fieri convenit sine crebro salis gustu. utuntur et caeno fontium ipsorum utiliter, sed ita si inlitum sole inarescat. nec vero omnes quae sint calidae medicatas esse credendum, sicut in Segesta Siciliae, Laris Troade, Magnesisa, Melo, Lipara. nec decolor species aeris argentive, ut multi existimaverunt, medicaminum argumentum est, quando nibil eorum in Patavinis fontibus, ne odoris quidem differentia aliqua deprehenditur.

I wonder that Homer made no mention of hot springs, and that though he frequently speaks of hot baths, the reason being that modern hydropathic treatment was not then a part of medicine. Sulphur waters, however, are good for the sinews, alum waters for paralysis and similar cases of collapse, waters containing bitumen and soda, such as that of Cutilia, are good for drinking and as a purge. Many people make a matter of boasting the great number of hours they can endure the heat of these sulphur waters - a very injurious practice, for one should remain in them a little longer than in the bath, afterwards rinse in cool, fresh water, and not go away without a rubbing in oil. The common people find these details irksome, and so there is no greater risk to health than this treatment, because an overpowering smell goes to the head, which sweats and is seized with chill, while the rest of the body is immersed. Those make a like mistake who boast of the great quantity of water they can drink. I have seen some already swollen with drinking to such an extent that their rings were covered by skin, since they could not void the vast amount of water they had swallowed. So it is not good to drink these waters without a frequent taste of salt. The mud too of medicinal springs is used with advantage, but the application should be dried in the sun. We must not think, however, that all hot waters are medicinal; for there are those at Segesta in Sicily, at Larisa in the Troad, at Magnesia, in Melos and Lipara. Nor is the discoloration of bronze or silver a proof, as many have thought, of medicinal properties, since there are none in the springs of Patavium. (trans. W.H.S. Jones)

Plutarch *Aem.Paul.* 14.2

Καίτοι τινὲς οὔ φασιν ὑδάτων ἑτοίμων κεκρυμμένων πηγὰς ἐναποκεῖσθαι τοῖς τόποις ἐξ ὧν ῥέουσιν, οὐδ᾽ ἀποκάλυψιν οὐδὲ ῥῆξιν εἶναι τὴν ἐκβολὴν αὐτῶν, ἀλλὰ γένεσιν καὶ σύστασιν ἐνταῦθα τῆς ὕλης ἐξυγραινομένης· ἐξυγραίνεσθαι δὲ πυκνότητι καὶ ψυξρότητι τὴν νοτερὰν ἀναθυμίασιν, ὅταν ἐν βάθει καταθλιβεῖσα ῥευστικὴ γένηται.... ἐλέγχονται δὲ τοῖς πρὸς τοὺς ὑπονόμους καὶ τὰς μεταλλείας ἀπαντῶσιν εἰς βάθη ποταμοῖς, οὐ κατ᾽ ὀλίγον συλλεγομένοις, ὥσπερ εἰκός ἐστιν εἰ γένεσιν ἐκ τοῦ παραχροῆμα κινουμένης τῆς γῆς λαμβάνουσιν, ἀλλ᾽ ἀθρόοις ἀναχεμένοις.

And yet some deny that stores of ready water lie hidden away beneath the places from which springs flow, and that they merely come to light or force a passage when they issue forth; they hold rather that the water is generated and comes into existence then and there through the liquefaction of matter, and that moist vapour is liquefied by density and cold, whenever, that is, it is compressed in the depths of earth and becomes fluid.... Moreover, they are refuted by the experience of men who dig mines, either for sieges or for metals, and in the depths enounter rivers of water, which are not gradually collected, as must naturally be the case if they come into existence at the instant that the earth is agitated, but pour forth in a great mass. (trans. B. Perrin, *LCL*, 1918)

Plutarch *C. Marius* 34.2

Ἐπεὶ δὲ ἤδη τῶν Ἰταλικῶν ἐγκεκλικότων ἐμηνστεύοντο πολλοὶ τὸᾳ Μιθριδατικὸν πόλεμον ἐν Ῥώμῃ διὰ τῶν δημαγωγῶν, παρὰ πᾶσαᾳ ἐλπίδα Σουλπίκιος δήμαρχος, ἀνὴρ θρασύτατος, παραγαγὼν Μάριον ἀπεδείκνυεν ἀνθύπατον στρατηγὸν ἐπὶ Μιθριδάτην. καὶ ὁ δῆμος διέστη, τῶν μὲν αἱρουμένων τὰ Μαρίου, τῶν δὲ Σύλλαν καλούντων καὶ τὸν Μάριον ἐπὶ θερμὰ κελευόντων εἰς Βαΐασ βαδίζειν καὶ τὸ σῶμα θεραπεύειν ὑπό τε γήρως καὶ ῥευμάτων ἀπειρηκός, ὡς αὐτὸς ἔλεγε. καὶ γὰρ ἦν ἐκεῖ περὶ Μισηνοὺς τῷ Μαρίῳ πολυτελὴς οἰκία, τρυφὰς ἔχουσα καὶ διαίτας θηλυτέρας ἢ κατ᾽ ἄνδρα πολέμων τοσούτων καὶ στρατειῶν αὐτουργόν. ταύτην λέγεται μυριάδων ἑπτὰ ἡμίσους Κορηνλία πρίασθαι· χρόνου δ᾽ οὐ πάνυ πολλοῦ γενομένου Λεύκιος Λεύκολλος ὠνεῖται μυριάδων πεντήκοντα καὶ διακοσίων· οὕτως ταχέως ἀνέδραμεν ἡ πολυτέλεια καὶ τοσαύτην ἐπίδοσιν τὰ πράγματα πρὸς τρυφὴν ἔλαβεν.

But when the Italians had at last made their submission, and many persons at Rome were suing for the command in the Mithridatic war, with the aid of the popular leaders, contrary to all expectation the tribune Sulpicius, a most audacious man, brought Marius forwards and proposed to make him pro-consul in command against Mithridates. The people were divided in opinion, some preferring Marius, and others calling for Sulla and bidding Marius go to the warm baths at Baiae and look out for his health, since he was worn out with old age and rheums, as he himself said. For at Baiae, near Cape Misenum, Marius owned an expensive house, which had appointments, more luxurious and effeminate than became a man who had taken active part in so many wars and campaigns. This house, we are told, Cornelia bought for seventy-five thousand drachmas; and not long afterwards Lucius Lucullus purchased it for two million five hundred thousand. So quickly did lavish expenditure spring up, and so great an increase in luxury did life in the city take on. (trans. B. Perrin)

Plutarch *Marcellus* 26.4

διώκειν γὰρ οὐκ ἦν δυνατὸς ὑπὸ πλήθους τῶν τετρωμένων, ἀλλὰ κατὰ σχολὴν εἰς Καμπανίαν ἀνέζευξε, καὶ τὸ θέρος ἐν Σινοέσσῃ διῆγεν ἀναλαμβάνων τοὺς στρατιώτας.

For Marcellus was unable to pursue him, owing to the multitude of his wounded, but withdrew by easy marches into Campania, and spent the summer at Sinuessa recuperating his soldiers. (trans. B. Perrin)

Plutarch *Otho* 2.3

ἔπεμψεν οὖν ἐπ' αὐτὸν ὁ Ὄθων εἰς τοὺς περὶ Σινόεσσαν ἀγρούς· ἐκεῖ γὰρ διῃτᾶτο, πλοίων παρορμούντων, ὡς φευξόμενος ἀπωτέρω.

Accordingly, Otho sent a messenger to fetch him [Tigellinus] from his country estate at Sinuessa; for he was staying there, where vessels lay at anchor, that he might fly to more distant parts. (trans. B. Perrin)

Propertius 1.11.1-2

Ecquid te mediis cessantem, Cynthis, Baiis / qua iacet Herculeis semita litoribus/ et modo Thesproti mirantem subdita regno / proxima Misenis aequora nobilibus

While you dally in the heart of Baiae, Cynthia, where lies a causeway on shores made by Hercules, and marvel that the waters but recently below Thesprotus' kingdom are now close to renowned Misenum. (trans. G.P. Goold, *LCL*, 1990)

Propertius 1.11.30

ah pereant Baiae, crimen amoris, aquae!

a curse on the waters of Baiae, that bring reproach on love!

Regianus *Anth. Lat.* 264

Quis deus has incedit aquas? quis fontibus ignes/miscuit et madidas fecit discurrere flammas?/ in regnis, Neptune, tuis Vulcanus anhelat.

What god heated these waters? Who mixed fires with springs and caused wet flames to spread about? Vulcan breathes in your kingdom, Neptune.

Regianus *Anth. Lat.* 265

Ante bonam Venerem gelidae per litora Baiae./illa natare lacus cum lampade iussit Amorem./ dum natat, algentes cecidit scintilla per undas./ hinc vapor ussit aquas. quicumque natavit, amavit.

Before lovely Venus (came) to the shores of cold Baiae, she bid Love to swim with a light in the pool. While he swims, a spark fell upon the chilling waters. Here the heat burned the waters. Whoever has swum there, s/he has loved.

Regianus *Anth. Lat.* 266

Bellipotens Mavors, Veneris gratissime furto,/ hic securus ama. locus hic amplexibus aptus:/ Bulcanus prohibetur aquis, Sol pellitur umbra.

Warlike Mars, secretly with very graceful Venus, here is safe in love. Here the place is fitting for embracings: Vulcan is prevented by the waters, Sol is driven away by the shade.

Rutilius Namatianus *De reditu suo* 1.249-254

nosse iuvat tauri dictas de nomine thermas: / nec mora difficilis milibus ire tribus./ Non illic gustu latices vitantur amoro / lymphaque fumifico sulphure tincta calet./ Purus odor mollisque sapor dubitare lavantem/ cogit qua melius parte petantur aquae.

We pay a pleasant visit to the hot springs named after a bull. the distance of three miles seems no troublesome delay. There the wells are not spoiled by a brackish flavour, nor is the water coloured and hot with fuming sulphur;the pure smell and delicate taste make the bather hesitate for what purpose the waters should be better used. (trans. J.W. Duff, *LCL*, 1935)

Scribonius Largus Compositiones 146

> *Ad tumorem et dolorem vesicae et exulcerationem bene facit aqua, in qua ferrum candens demissum est. hoc ego traxi ab aquis calidis quae sunt in Tuscia ferratae et mirifice remediant vesicae vitia (appellantur itaque vesicariae), quondam Milonis Brochi praetorii, hominis optimi, ad quinquagesimum lapidem.*
>
> For a tumour and injury of the bladder and soreness, water makes it well, water in which shining iron is derived. I extract it from hot springs in Etruria which are ferruginous and wondrously cure defects of the bladder (thus they are called [Aquae] Vesicariae), formerly by Milo Brochus, the best of men, at the fiftieth milestone.

Seneca *Ep.* 41.3

> *Magnorum fluminum capita veneramur; subita ex abdito vasti amnis eruptio aras habet; coluntur aquarum calentium fontes, et stagna quaedam vel opacitas vel immensa altitudo sacravit.*
>
> We worship the sources of mighty rivers; we erect altars at places where great streams burst suddenly from hidden sources; we adore springs of hot water as divine, and consecrate certain pools because of their dark waters or immeasurable depth. (trans. R.M. Gummere, *LCL*, 1917)

Seneca *Ep.* 51.1

> *Nos utcumque possumus, contenti sumus Bais, quas postero die quam adtigeram reliqui, locum ob hoc devitandum, cum habeat quasdam naturales dotes, quia illum sibi celebrandum luxuria desumpsit.*
>
> I do whatever I can, I am contented with Baiae, which after the day on which I arrived, I left, because this place ought to be avoided, although it has natural resources, because luxury has claimed for itself as a celebrated place. (trans. R.M. Gummere)

Seneca *QNat.* 3.1.1

> *Quaremus ergo de terrestribus aquis aut et investigemus qua ratione fiant, sive, ut ait Ovidius: "Fons erat illimis nitidis argenteus undis," sive, ut ait Vergilius: "Unde per ora novem vasto cum murmure montis It mare praeruptum et pelago premit arva sonanti," sive, ut apud te, Iunior carissime, invenio: "Elius Siculis de fontibus exilit amnis."*
>
> Let us, then, study the waters of the earth or investigate also the causes that produce them, whether as Ovid says: "There was a fountain silvery clear with shining waters," or, as Virgil says: "Whence through nine mouths with a mighty roar from the mountain a sea goes bursting forward and presses down the fields with its resounding expanse. Or, as I find in your poem, dear Junior: "A stream of Elis leaps from Sicilian springs." (trans. T.H. Corcoran, *LCL*, 1971)

Seneca *QNat.* 3.1.2

> *Nunc vulgares aquas persequamur, tam frigidas quam calentes. In quibus calentibus quaerendum erit utrum calidae nascantur an fiant. De ceteris quoque disseremus, quas insignes aut sapor aut aliqua reddit utilitas. Quaedam enim oculos, quaedam nervos iuvant; quaedam inveterata et desperata a medicis vitia percurant; quaedam medentur ulceribus; quaedam interiora potu fovent et pulmonis ac viscerum querelas levant; quaedam supprimunt sanguinem. Tam varius singulis usus quam gustus est.*
>
> At present, let us study common waters, both hot and cold. In studying hot waters it must be determined whether they are produced hot or become hot. We will also discuss other waters, those which a flavor or some special usefulness makes remarkable. For example some cure eyes, some

sinews: some completely cure chronic ailments and given up by doctors. Some heal sores; some on being drunk relieve internal pain and alleviate complaints of the lungs and bowels. Some check bleeding.Individual uses are as varied as their tastes. (trans. T.H. Corcoran)

Seneca *QNat.* 3.2.1

Aut stant omnes aquae, aut eunt, aut colliguntur, aut varias habent venas. Aliae dulces sunt, aliae varie asperae. Quippe interveniunt salsae amaraeque aut medicatae, ex quibus sulphuratas dicimus, ferratas, aluminosas; indicat vim sapor. Habent praeterea multa discrimina, primum tact: frigidae calidaeque sunt; deinde ponderis: leves et graves sunt; deinde coloris: purae sunt, turbidae, caeruleae, luridae; deinde salubritatis: sunt enim utiles, sunt mortiferae.

All waters are still, running, collected, or occupy various underground channels.Some are sweet, others have flavors that are disagreeable in different ways; among them are the salty, bitter, and medicinal. In the last category I mean sulphur, iron, and alum waters. Taste indicates properties. They have many other distinctive qualities as well. First touch: they are hot or cold. Then weight: they are light or heavy. Then color: they are clear, muddy, blue, yellowish. Then healthfulness: for some are wholesome, others deadly. (trans. T.H. Corcoran)

Seneca *QNat.* 3.10.1

Adicias etiam licet quod fiunt omnia ex omnibus, ex aqua aer, ex aere aqua, ignis ex aere, ex igne aer; quare ergo non ex terra fiat aqua?

You may add, also, the principle that everything comes everything: air from water, water from-air, fire from air, air from fire. Therefore why not water from earth?

Seneca *QNat.* 3.11.5

Idem ait circa Arcadiam,quae urbs in Creta insula fuit, fontes et rivos substitisse,quia desierit coli terra diruta urbe;postea vero quam cultores receperit, aquas quoque recepisse.Causam siccitatis han ponit quod obduruerit constricta tellus nec potuerit imbres inagitata transmittere. Quomodo ergo plurimos videmus in locis desertissimis fontes?

He said that around Arcadia, which was a city on the island of Crete, fountains and rivers ceased to exist because the earth ceased to be cultivated after the city was destroyed; but after the earth got back its cultivators, it also recovered its waters. He proposed this reason for the dryness: namely, that the constricted earth became hard and while it was not being stirred it was unable to transmit rainwaters. So why do we see very many springs in the most uncultivated places? (trans. T.H. Corcoran)

Seneca *QNat.* 3.20.1

At quare aquis sapor varius? Propter quattuor causas. Ex solo prima est per quad fertur;secunda ex eodem,si mutatione eius nascitur;tertia ex spiritu qui in aquam transfiguratus est;quarta ex vitio quod saepe concipiunt corruptae per iniuriam.Hae causam saporem dant aquis variu,hae medicatam potentiam,hae graven spiritum odoremque pestiferum gravitatemque,hae aut calorem aut nimium rigorem. Interest utrum loca sulphure an nitro an bitumine plena transierint;hac ratione corruptae cum vitae periculo bibuntur.

But why variety of taste in water?There are four causes: 1) from the soil through which the water is carried; 2) also depends on the soil if the water is produced by a change of earth into water; 3) comes from air which was changed into water; 4) from pollution which water often receives if it has been corrupted by harmful substances.These give water its different taste,medicinal power, disagreeable exhalation,and pestilential odour, as well as its unwholesomeness, heat or excessive cold. It makes a difference, whether it passes through places full of sulphur, nitre, or bitumen. When water is polluted this way it is a risk of life to drink it. (trans. T.H. Corcoran)

Seneca *QNat.* 3.20.4

si noteveris Albulas et fere sulphuratam aquam circa canales suos repasque durari

if you will have noticed the waters of Albula and water bearing sulphur are hardened around their channels and their banks. (trans. T.H. Corcoran)

Seneca *QNat.* 3.24.3

Idem sub terra Empedocles existimat fieri,quem non falli crede Baianis, quibus balnearia sine igne calefiunt. Spiritus in illa fervens loco aestuanti infunditur; hic per tubos lapsus non aliter quam igne subdito parietes et vasa balnei calefacit; omnis denique frigida transitu mutatur calidam nec trahit saporem e vaporario, qui praelabitur.

The people at Baiae believe Empedocles, whose baths are heated without fire. Burning air from a burning place is fed into them; here gliding through tubes not other than as if fire was applied, it heats the walls and tubs of the baths. Finally, all the cold water is changed in hot water nor does it pick up flavour from the steam pipe, because it goes through in a closed pipe. (trans. T.H. Corcoran)

Seneca *QNat.* 3.24.4

Quidam existimant per loca sulphure plena vel nitro euntes aquas calorem beneficio materiae per quam fluunt trahere. Quod ipso odore gustuque testantur; reddunt enim qualitatem eius qua cauere materiae. Quod ne accidere mireris, vivae calci aquam infunde, fervebit.

Some suppose that water passing through places full of sulphur or nitre takes on heat from the properties of the material through which it flows. The water indicates this by its special odour and taste, for it reproduces the quality of the material which made it become warm. If you are surprised that this happens, pour water on quicklime, it will boil. (trans. T.H. Corcoran)

Seneca *QNat.* 3.25 .8

Ipse ad Cutilias natantem insulam vidi.... Cutiliarum insula et arbores babet et herbas nutrit; tamen aqua sustinetur et in hanc atque illam partem non vento tantum sed aura compellitur, nec umquam illi per diem ac noctem uno loco statio est; adeo movetur levi flatu. Huic duplex causa est: aquae gravitas medicatae et ob hoc ponderosae, ...utique circa medicatorum fontium rivos, ubi purgamenta aquarum coaluerunt et spuma solidatur. Necessario leve est quod ex ventoso inanique concretum est.

I myself at Cutiliae saw a floating island.... The island of Cutilae has both trees and grows grasses; nevertheless it is sustained by water and is driven by the wind and breeze here and there, and never is there a single place through day and night; it is moved by a light puff. The cause is double for this: the heaviness of the mineral waters and because of this it is heavy... where around the streams of mineral springs, where the deposits of the waters hardened and foam is solidified... (trans. T.H. Corcoran)

SHA *Antoninus Pius* 5.1

sed Hadriano apud Baias mortuo reliquias eius Romam pervexit sancte ac reverenter atque in hortis Domitiae conlocavit

But when Hadrian died at Baiae, he bore his remains to Rome with sanctity and reverence and buried him in the gardens of Domitia.

SHA *Hadrian* 22.7

ante octavam horam in publico neminem nisi aegrum lavari passus est.

Before the eighth hour no one except the sick was allowed to bath in public.

SHA *Hadrian* 25.5-7

Post haec Hadrianus Baias petiit Antonino Romae ad imperandum relicto. ubi cum nihil proficeret, arcessito Antonino in conspectu eius apud ipsas Baias periit die VI iduum Iuliarum. invisusque omnibus sepultus est in villa Ciceroniana Puteolis.

After this Hadrian travelled to Baiae, and Antoninus was left in Rome to rule. But he received no benefit there, and Antoninus was summoned, and in his presence he died there at Baiae on the sixth day before the Ides of July. Hated by all, he was buried at Puteoli on an estate that had belonged to Cicero.

Sidonius Apollinaris *Ep.* 5.14

Calentes nunc te Baiae et scabris cavernatim ructata pumicibus aqua sulpuris atque iecorosis ac phthisiscentibus languidis medicabilis piscina delectat?

Are you enjoying your warm Baiae and the sulphurous water forced out from the hollows in the rough porous rock and the bathing-pool so healthgiving to liverish and consumptive invalids? (trans. W.B. Anderson, *LCL*, 1965)

Sidonius Apollinaris *Carm.* 18.12

Si quis Avitacum dignaris visere nostram,/ non tibi displiceat:sic quod habes placeat./ aemula Baiano tolluntur culmina cono/ parque cothurnato vertice fulget apex./ garrula Gauranis plus murmurat unda fluentis/ contigui collis lapsa supercilio./ Lucrinum Campania nollet,/ aequora si nostri cerneret illa lacus./ illud puniceis ornatur litus echinis:/ piscibus in nostris, hospes, utrumque vides./ si libet et placido partiris gaudia corde,/ quisquis ades, Baias tu facis hic animo.

Whoever you be,if you care to visit our Avitacum, let it not displease you:so may what you possess satisfy you. Here a roof rises that rivals the cone of Baiae, and no whit inferior shines the peaked tip with a proud crest. There chattering water falling from a brow of a neighbouring hill babbles more busily than streams that flow from Gaurus. Rich Campania would be ill-pleased with Lucrine mere if it beheld waters of our lake. That other shore is adorned by red sea-urchins, but in our fish, guest, you see both.... (W.B. Anderson, *LCL*, 1936)

Silius Italicus *Pun.* 8.529

Sinuessa tepens fluctuque

Sinuessa of warm springs

Soranus 1.56

τῆς τῶν μερῶν ἀνέσεως καὶ νήξεσιν ταῖς ἐν ὕδατι γλυκεῖ καὶ θερμῷ· τὰ γὰρ αὐτοφυῆ δριμυτέρας ἔχοντα τὰς ποιότητας οὐδὲν διαφέρει τῶν εἰς φθορὰν ὑποτιθεμένων φαρμάκων.

The woman should indulge in baths more frequently in order to provide for relaxation of the parts and should swim in sweet warm water, for natural waters which have relatively pungent qualities differ in no way from drugs inserted for abortion. (trans. O. Temkin, Baltimore, 1991)

Soranus 3.16

μηδὲ οὕτως λυομένης <δὲ> τῆς διαθέσεως τῷ λευκῷ σπαρακτέον ἐλλεβόρῳ καὶ μετ᾽ αὐτὸ δοκιμαστέον ἀποδημίαν μακροτέραν καὶ αὐτοφυῶν ὑδάτων χρῆσιν καὶ τὸ σύνολον τῆς ψυχῆς διάχυσιν. οὕτω γὰρ ἐξ ἐπιμονῆς τε τῶν αὐτῶν καὶ προσθέσεως τῶν σφοδροτέρων λυομένου τοῦ πάθους ἡ κάθαρσισ ἀπαραπόδιστος γίνεται.

If, even so the condition is unrelieved, one must make the patient choke with white hellebore and must afterwards prescribe prolonged traveling, the use of natural waters, and, in general, diversion of the mind. For if by thus keeping on with the same things and adding more active ones, the condition is relieved, menstruation becomes umimpeded. (trans. O. Temkin)

Soranus 3.28

εἰ δὲ μὴ λύοιτο ἡ διάθεσις, καὶ τῷ [ἀπὸ] δἰ ἐλλεβόρου λευκοῦ σπαραγμῷ μετὰ τοὺς ἀπὸ ῥεφανίδων ἐμέτους ἀποδημίαις τε ἐπὶ γῆς καὶ θαλάσσης καὶ αὐτοφυέσιν ὕδασιν, ὧν ἁπάντων τὴν ἐπιδέξιον χρῆσιν ἐν τοῖς Περὶ βοηθημάτων ὑπομνήμασιν ἐφωδεύκαμεν.

If, however, the condition does not clear up, then one must also make the patient choke by means of white hellebore after having provoked vomiting by means of radishes, order traveling on land and sea, and prescribe natural waters. We have described the proper use of all of these things in our work On Therapeutics. (trans. O. Temkin)

Soranus 3.32

καὶ πᾶσι τοῖς μετασυγκρίνειν δυναμένοις χρηστέον, καθάπερ τοῖς αὐτοφυέσιν ὕδασιν καὶ κατακρουνισμοῖς καὶ νήξεσιν, πρῶτον μὲν θερμοῖς, ὕστερον δὲ καὶ ψυχροῖς, κατ᾽ ὀλίγον ἐθίζοντας τὸ σῶμα ὑπομένειν τὴν ψυχρολουσίαν, ὥστε τονωθῆναι τὰ πεπονθότα μέρη.

And one should make use of everything that is apt to cause metasyncrisis, such as natural waters, shower baths and swimming, the temperature warm at first, later on cold; thus gradually accustoming the body to stand the cold so that the affected parts may be strengthened. (trans. O. Temkin)

Soranus 3.38

δοκιμαστέον δὲ καὶ δριμυφαγίαν προκοπτούσης τῆ διαθέσεως καὶ τὴν κατὰ κύκλον ἀγωγὴν καὶ τῶν αὐτοφυῶν χρῆσιν καὶ κατακρουνισμῶν καὶ νήξεως ἐν θαλάττῃ ἢ αὐτοφυέσιν ὕδασιν καὶ τοὺς ἀπὸ ῥεφανίδων ἐμέτους καὶ εἰ ἡ δύναμις ἐπιτρέποι, καὶ τοὺς ἀπὸ ἐλλεβόρων.

If the condition progresses one should also try a pungent diet, the cyclic cure, the use of natural waters and shower baths and swimming in the sea or in natural waters, and should try to provoke vomiting with radishes and - if the strength of the patient allows - with hellebore too. (trans. O. Temkin)

Soranus 3.44

εἰ δὲ χρονίσας ὁ ῥοῦς ποτὲ μὲν ἐπιθέσεις, ποτὲ δὲ διαλείμματα λαμβάνοι, κατὰ μὲν τὴν ἐπίθεσιν τοῖς ἁπλοῖς παρηγορίας ἕνεκεν χρηστέον, κατὰ δὲ τὰ διαλείμματα τοῖς τονοῦν καὶ μετασυγκρίνειν δυναμένοις, οἷον αἰώρᾳ διαφόρῳ, περιπάτῳ, ἀναφωνήσει, ἀναληπτικῇ ἐπιμελίᾳ λουτρῷ, οἰναρίῳ, ποικίλῃ, τροφῇ, παροπτήσεσιν, ἡλιώσεσιν, σικύαις μετασυγκριτικαῖς, δρώπαξι, τρίψεσι διὰ γυμνῶν τῶν χειρῶν ἢ ψιλώτρῳ ἢ σμήγμασι μετασυγκριτικοῖς, σιναπισμῷ, ἐμέτῳ ἀπὸ ῥαφανίδων, δριμυφαγίᾳ καὶ τῇ κατὰ κύκλον ἀγωγῇ, κολύμβοις, κατακρουνισμοῖς ἐν ὕδασιν αὐτοφυέσιν, ἀλλαγαῖς ἀέρων διὰ γῆς καὶ θαλάσσης, ἐγκαθίσμασί τε καὶ πεσσοῖς τοῖς ἀμύσσειν δυναμένοις.

If however, having become chronic, the flux exhibits exacerbations as well as remissions, one should use simple remedies during the exacerbations in order to give some relief. During the remissions, however, one should use things capable of giving strength and effecting metasyncrisis; for instance, various passive exercises, promenades, vocal exercise, the restorative cure, baths, wine in moderation, varied foods, intense heat, sun baths, metasyncritic cupping, pitch plasters, massage with the bare hands or with a linen towel, depilatories or metasyncritic unguents, mustard plasters, radishes to effect vomiting, a pungent diet and the cyclic cure, swimming, shower baths in natural waters, a change of air by land and sea travel, sitz baths and vaginal suppositories which have and irritating action. (trans. O. Temkin)

Statius *Silv.* 1.5.60

nec si Baianis veniat novus hospes ab oris,/ talia despiciet - fas sit componere magnis / parva - Neronea nec qui modo lotus in unda,/ hic iterum sudare neget.

Nor if a new guest should arrive from the Baian shore, would he despise such things - if it is allowed to compare great things with small - nor would one who just now had bathed in Nero's baths, would he deny to sweat again here.

Strabo 5.1.11

ἔστι δὲ ἡ Δερτὼν πόλις ἀξιόλογος κειμένη κατὰ μέσην τὴν ἀπὸ Γενούας εἰς Πλακεντίαν, ἑκατέρας διέχουσα σταδίους τετρακοσίους· κατὰ δὲ ταύτην τὴν ὁδὸν καὶ Ἀκουαιστατιέλλαι.

Derton is a considerable city, and it is situated about midway of the road which runs from Genua to Placentia, being four hundred stadia distant from each; and this is the road on which Aquae Statiellae is situated. (trans. H.L. Jones, *LCL*, 1917)

Strabo 5.2.3

ἡ δὲ οὕτω λαμπρὰ καὶ ἐπιφανὴς πόλις νῦν ἴχνη σώζει μόνον, εὐανδρεῖ δ᾽αὐτῆς μᾶλλον τὰ πλησίον θερμά, ἃ καλοῦσι Καιρετανά, διὰ τοὺς φοιτῶντας θεραπείας χάριν.

But the city, once so splendid and illustrious, now preserves mere traces of its former self; and the hot springs near by, which are called Caeretanian Springs, have a greater population than it has - because of those who visit the Springs for the cure. (trans. H.L. Jones)

Strabo 5.2.9

πολλὴ δὲ καὶ τῶ θερμῶν ὑδάτων ἀφθονία κατὰ τὴν Τυρρηνίαν, ἃ τῷ πλησίον εἶναι τῆς Ῥώμης οὐχ ἧττον εὐανδρεῖ τῶν ἐν Βαΐ, ἃ διωνόμασται πολὺ πάντων μάλιστα.

Furthermore, there are abundant hot springs in Tyrrhenia, and, because of the fact that they are near Rome, they have a population not less than the springs at Baiae, which are by far the most widely renowned of all. (trans. H.L. Jones)

Strabo 5.3.1

Σαβῖνοι δὲ στενὴν οἰκοῦσι χώραν, ἐπὶ μῆκος δὲ διήκουσαν καὶ χιλίων σταδίων ἀπὸ τοῦ Τιβέρεως καὶ Νωμέντου πολίχνης μέχρις Οὐηστίνων. πόλεις δ᾽ ἔχουσιν ὀλίγασς καὶ τεταπεινωμένας διὰ τοὺς συνεχεῖς πολέμους, Ἀμίτερνον καὶ Ῥεάτε, ᾧ πλησιάζει κώμη Ἰντεροκρέα καὶ τὰ ἐν Κωτιλίαις ψυχρὰ ὕδατα, ἀφ᾽ ὧ καὶ πίνουσι καὶ ἐγκαθίζοντεσ θεραπεύονται νόσους.

The country the Sabini live is is narrow, but taken lengthwise it reaches even a thousand stadia from the Tiber and the little town of Nomentum, as far as the country of the Vestini. They have but few cities and even these have been brought low on account of the continual wars; they are Amiternum, and Reate (near which is the village of Interocrea, and also the cold springs of Cotiliae, where people cure their diseases not only drinking from the springs but also by sitting down in them). (trans. H.L. Jones)

Strabo 5.3.6

ἡ δὲ Σινόεσσα ἐν Καιετάνῳ κόλπος· πλησίον ἐστὶ δ᾽ αὐτῆς θερμὰ λουτρὰ, κάλλιστα ποιοῦντα πρὸς νόσους ἐνίας.

Sinuessa is situated in the Caietan "Kolpos," and hence its name; for Kolpos means Sinus; and near Sinuessa are hot baths, which are most efficacious for certain diseases. (trans. H.L. Jones)

Strabo 5.3.11

ἐν δὲ πεδίῳ τούτῳ καὶ τὰ Ἄλβουλα καλούμενα ῥεῖ ὕδατα ψυχρὰ ἐκ πολλῶν πηγῶν, πρὸς ποικίλας νόσους καὶ πίνουσι καὶ ἐγκαθημένοις ὑγιεινά· τοιαῦτα δὲ καὶ τὰ Λαβανά, οὐκ ἄπωθεν τούτων ἐν τῇ Νωμεντανῇ καὶ τοῖς περὶ Ἠρητὸν τόποις.

In this plain, also, flow what are called the Albula waters - cold waters from many springs, helpful, both as drinking-water and as baths, in the cure of various diseases; and such, also, are the Labana waters, not far from the former (Albula), on the Nomentan Way and in the neighbourhood of Eretum. (trans. H.L. Jones)

Strabo 5.4.5

κάμψαντι δὲ τὸ Μισηνὸν λιμὴν εὐθὺς ὑπὸ τῇ ἄκρᾳ, καὶ μετὰ τοῦτον ἐγκολπίζουσα ᾐὼν εἰς βάθος, ἐν ᾗ αἱ Βαῖαι καὶ τὰ θερμὰ ὕδατα τὰ καὶ πρὸς τρυφὴν καὶ πρὸς θεραπεὶν νόσων ἐπιτήδεια.

After you double Cape Misenum you immediately come to a harbour, at the base of the cape, and after the harbour, to a stretch of coast which runs inland and forms a deeply indented gulf - the coast on which is situated Baiae, and those hot springs that are suited both to the taste of the fastidious and to the cure of disease. (trans. H.L. Jones)

Strabo 5.4.6

ἦν δὲ πρότερον μὲν ἐπίνειον Κυμαίων ἐπ᾽ ὀφρύος ἱδρυμένον, κατὰ δὲ τὴν Ἀννίβα στρατείαν συνῴκισαν Ῥωμαῖοι καὶ μετωνόμασαν Ποτιόλους ἀπὸ τῶν φρεάτων· οἱ δ᾽ ἀπὸ τῆς δυσωδίας τῶν ὑδάτων, ἣν ἅπαν τὸ χωρίον ἔχει μέχρι Βαιῶν καὶ τῆς Κυμαίας ὅτι θείου πλῆρές ἐστι καὶ πυρὸς καὶ θερμῶν ὑδάτων.

In earlier times [Misenum] was only a port-town of the Cumaeans, situated on the slope of a hill, but at the time of Hannibal's expedition the Romans settled a colony there, and changed its name to Puteoli from the wells there-those some say that it was from the foul smell of the waters, since the whole district, as far as Baiae and Cumae, has a foul smell, because it is full of sulphur and fire and hot waters. (trans. H.L. Jones)

Strabo 5.4.7

ἔχει δὲ καὶ ἡ Νεάπολις θερμῶν ὑδάτων ἐκΒολὰς καὶ κατασκευὰς λουτρῶν οὐ χείρους τῶν ἐν Βαίαις, πολὺ δὲ τῷ πλθεήι λειπομένας· ἐκεῖ γὰρ ἄλλων ἐπ᾽ ἄλλοις, οὐκ ἐλάττων τῆς Δικαιαρχείας. ἐπιτείφουσι δὲ τὴν ἐν Νεαπόλει διαγωγὴν τὴν Ἑλληνικὴν οἱ ἐκ τῆς Ῥώμης ἀναχωπροῦντεσ δεῦρο ἡσυχίας χάριν τῶν ἀπὸ παιδείας ἐργασαμένων ἢ καὶ ἄλλων διὰ γῆρας ἢ ἀσθένειαν ποθούντων ἐν ἀνέσει ζῆν.

Furthermore Neapolis has springs of hot water and bathing-establishments that are not inferior to those at Baiae, although it is far short of Baiae in the number of people, for at Baiae,where palace on palace has been built, one after another, a new city has arisen, not inferior to Dicaearchia. Greater vogue is given to the Greek mode of life at Neapolis by the people who withdraw there from Rome for the sake of rest - I mean the class (Greeks) who have made their livelihood by training the young,or still others who, because of old age or infirmity, long to live in relaxation. (trans. H.L. Jones)

Strabo 5.4.9

πιθαντώερον δὲ Πίνδαρος εἴρηκεν ἐκ τῶν θαινομένων ὁρμηθείς· ὅτι πᾶς ὁ πόρος ὑῦτος, ἀπὸ τῆς Κυμαίας ἀρξάμενος μέχρι τῆς Σικελίας, διάπυρός ἐστι, καὶ κατὰ Βάθους ἔχει κοιλαίς τινὰς εἰς ἓν συναπτούσας πρός τε ἀλλήλας, καὶ πρὸς τὴν ἤπειρον. διόπερ ἥ τε Αἴτνη τοιαύτην ἔχειν δείκνυται φύσιν, οἵαν ἱστοπροῦσιν ἅπαντες, καὶ αἱ τῶν Λιπαραίων νῆσοι καὶ τὰ περὶ τὴν Δικαιαρχείαν καὶ Νεάπολιν καὶ Βαΐας χωρία καὶ αἱ Πιθηκοῦσσαι.

But what Pindar says is more plausible, since he starts with the actual phenomena; For this whole channel, beginning at the Cumaean country and extending as far as Sicily, is full of fire, and has caverns deep down in the earth that form a single whole, connecting not only with one another but also with the mainland; and therefore,not only Aetna clearly has such a character as it is reported by all to have, but also the Liparia Islands, and the districts round about the Dicaearchia, Neapolis, and Baiae, and the island of Pithecussae. This, I say, is Pindar's thoght when he says that Typon lies beneath this whole region. (trans. H.L. Jones)

Strabo 5.4.9

δοκεῖ δὲ τὰ θερμὰ ὕδατα ἐνταῦθα θεραπεύειν τοὺς λιθιῶντας.

The hot springs in the island are thought to cure those who have gall-stones. (trans. H.L. Jones)

Suetonius *Aug.* 81.1

Graves et periculosas valitudines per omnem vitam aliquot expertus est; praecipue Cantabria domita, cum etiam destillationibus iocinere vitiato ad desperationem redactus contrariam et ancipitem rationem medendi necessario subiit; quia calida fomenta non proderant, frigidis curari coactus auctore Antonia Musa.

He experienced serious, dangerous illnesses all through his life; especially after Cantabria was conquered, when he was in such a desperate plight from abscesses of the liver, that he was forced to submit to an unprecedented and hazardous course of treatment. Since hot fomentations did not deliver him, he was compelled by the doctor Antonius Musa to try cold ones.

Suetonius *Aug.* 82.2

At quotiens nervorum causa marinis Albulisque calidis utendum esset, contentus hoc erat ut insidens ligneo solio, quod ipse Hispanico verbo duretam vocabat, manus ac pedes alternis iactaret.

But when he had to use sea water and hot water from Albula for his nerves, he was content sitting in a wooden tub, which he called by the Spanish name dureta, he threw in his hands and feet alternating.

Suetonius *Nero* 31.2

balineae marinis et albulis fluentes aquis

the baths were flowing with sea water and water from Albula

Suetonius *Nero* 31.3

Praeterea incohabat piscinam a Miseno ad Avernum lacum contectam porticibusque conclusam, quo quidquid totis Baiis calidarum aquarum esset converteretur.

Besides this, he began a pool from Misenum to lake Avernus which was covered and enclosed by colonnades, to which he might turn however much of hot waters there were in all of Baiae.

Suetonius *Titus* 11

Excessit in eadem qua pater villa Id. Sept.

He died in the same villa as his father the Ides of September

Suetonius *Vesp.* 24

Consulatu suo non temptatus in Campania motiunculis levibus protinusque urbe repetita, Cutilias ac Reatina rura, ubi aestivare quotannis solebat, petit. Hic cum super urgentem valitudinem creberrimo frigidae aquae usu etiam intestina vitiasset nec eo minus muneribus imperatoriis ex consuetudine fungeretur, ut etiam legationes audiret cubans, alvo repente usque ad defectionem soluta, imperatorem ait stantem mori oportere; dumque consurgit ac nititur, inter manus sublevantium extinctus est 9 Kal. Iul....

In his ninth consulship attacked by gentle illness in Campania and immediately returning to the city, he sought Cutilian and the Reate countryside, where each year he used to spend the summer. Here, although in addition to his oppressing illness, he damaged his intestines by too much use of cold waters he did not less perform his imperial duties as usual, so that lying in bed, he heard legates. Taken suddenly by diarrhoea, he said an emperor ought to die standing; then he stood up and he died in supporting hands.

Symmachus *Ep.* 1.7

Nunc properato opus est, ut dum anni tempus calet, autumni bona raptim fuamur. His quippe mensibus Campania nitet agri ubere et arbusti honore, Baiae imbre raro, sole modico temperantur, mensae ab edulibus copiosae sunt, quibus tu amicorum catervas minaris.

Now there is need to hurry, so that, while the time of year is hot, we may enjoy the good things of autumn speedily. During these months, Campania looks beautiful from the abundance of the field and from the charm of the tree, Baiae is temperate from little rain and from a bit of sun, the tables are full with things to eat, with which you promise your group of friends.

Symmachus *Ep.* 2.26

Baiarum solitudine vehementer offensus Puteolis malui commorari....

Displeased with the solitude of Baiae, I prefer to stay in Puteoli....

Tacitus *Ann.* 12.66

In tanta mole curarum valetudine adversa corripitur, refovendisque viribus mollitia caeli et salubritate aquarum Sinuessam pergit.

Under the weight of anxiety, his health broke down, and he left for Sinuessa, to renovate his strength by the gentle climate and the medicinal springs.

Tacitus *Hist.* 1.72

donec Tigellinus accepto apud Sinuessanas aquas supremae necessitatis nuntio inter stupra concubinarum et oscula et deformis moras sectis novacula faucibus infamem vitam foedavit etiam exitu sero et inhonesto.

Finally Tigellinus, at the Sinuessanae waters, receiving the message that the hour of his supreme necessity had come, amid the embraces and kisses of his mistresses, shamefully delaying his end, finally cut his throat with a razor, still further defiling a notorious life by a tardy and ignominious death. (trans. C.H. Moore, *LCL*, 1925)

Tibullus 3.5

Vos tenet, Etruscis manat quae fontibus unda,/ unda sub aestivum non adeunda Canem,/ nunc autem sacris Baiarum proxima lymphis,/ cum se purpureo vere remittit humus. ... atque utinam vano nequiquam terrear aestu!/ languent ter quinos sed mea membra dies./ at vobis Tuscae celebrantur numina lymphae/ et facilis lenta pellitur unda manu./ vivite felices, memores et vivite nostri,/ sive erimus seu nos fata fuisse velint./ interea nigras pecudes promittite Diti/ et nivei lactis pocula mixta mero.

You, my friends, stay by the stream which flows from the Etruscan springs, a stream which should not be approached in the Dog-star's heat, but now second only to the holy waters of Baiae when the ground loosens in bright-hued spring. ... And would that it were no real fever, but some vain alarm! But for thrice five days strength has left my limbs. But you, resort to the haunts of Tuscan water sprites, and the stream parts lightly to the strokes of your leisurely arms. May ye live happy and with thoughts of me... (adapted from J.P. Postgate, *LCL*, 1913, reprint 1962)

Valerius Maximus 1.6.5

Caerites aquas sanguine mixtas fluxisse

at the Caeretean waters mixed with blood flowed

Varro *Ling.* 5.25

A puteis oppidum ut Puteoli, quod incircum eum locum aquae frigidae et caldae multae, nisi a putore potius, quod putidus odoribus saepe ex sulphure et alumine.

From putei, wells, comes the townname, such as Puteoli, because around this place there are many hot and cold spring-waters; unless rather from putor, stench, because the place is often putidus, stinking; with smells of sulphur and alum. (trans. R.G. Kent)

Varro *Ling.* 9.69

Sic aquae caldae ab loco et aqua quae ibi scateret, cum ut colerentur venissent in usum nostris, cum aliae ad alium morbum idoneae essent, eae cum plures essent, ut Puteolis et in Tuscis, quibus utebantur, multitudinis potius quam singulari vocabulo appellerunt.

So also, the hot springs, on account of the locality and the water which gushed out there, came to be frequented for our use, since some of the springs were beneficial to one disease and others to another; and because those which they used were several in number, as at Puteoli and in Etruria, they called them by a plural word rather than by a singular. (trans. R.G. Kent)

Varro *Ling.* 41.68

Item reprehendunt analogias, quod dicantur multitudinis nomine publicae balneae, non balnea....et aquae caldae, pleraque cum causa, multitudinis vocabulis sint appellata neque eorum singularia in usum venerint; idemque item contra.

Likewise they find fault with the Regularities, because public baths are spoken of as balneae, with the form in the plural, and not as balnea, in the singular....and aquae caldae 'hot springs,' mostly with good reason, have been called by plural names and the corresponding singulars have not come into use; and vice versa. (trans. R.G. Kent, *LCL*, 1938)

Vitruvius 2.6.2

Ardores autem esse in his locis etiam haec res potest indicare, quod in montibus cumanorum Baianis sunt loca sudationibus excavata, in quibus vapor fervidus ab imo nascens ignis vehementia perforat eam terram per eamque manando in his locis oritur et ita sudationum egregias efficit utilitates.

In the hills of Baiae of Cumae sites are excavated for sweating-rooms. In these hot vapour rising deep down perforates the soil by the violence of its heat, and passing through it rises in these places, and so produces striking advantages in sweating-rooms. (trans. F. Granger, *LCL*, 1970)

Vitruvius 2.6.4

quoniam ita sunt in Etruria ex aqua calida crebri fontes

since there are in Etruria frequent springs from hot water

Vitruvius 8.2.8-9

...uti multo meliora inveniantur capita fontium, quae ad septentrionem aut aquilonem spectant, nisi si inciderint in sulphurosum locum aut aluminosum seu bituminosum. Tunc enim permutantur <et> aut calidae aquae aut frigidae odore malo et sapore profundunt fontes. 9. Neque enim calidae aquae est ulla proprietas, sed frigida aqua, cum incidit percurrens in ardentem locum, effervescit et percalefacta egreditur per venas extra terram. Ideo diutius non potest permanere, sed brevi spatio fit frigida. Namque si naturaliter esset calida, non refrigeraretur calor eius. Sapor autem et odor et color eius non restituitur, quod intinctus et commixtus est propter naturae raritatem.

.. it remains that much better sources are found to the north and north-east, unless they come upon sulphur, alum or bitumen. For then they are changes, and either hot or cold, they send forth springs of a bad flavour or odour. 9. For there is no special character attaching to hot water, but when cold water, as it runs, comes upon hot ground, it seethes and comes out warm through the cracks above ground. Therefore it cannot retain its heat, but soon becomes cold. For if it were naturally warm, its warmth would not be subject to chill. But taste and smell and colour are not surrendered, because it is steeped and blended with these qualities owing to its rarefied texture. (trans. F. Granger)

Vitruvius 8.3.1

...Haec autem ab natura perficiuntur his rationibus. Cum in imo per alumen aut bitumen seu sulphur ignis excitatur, ardore percandefacit terram, quae est supra se; autem fervidum emittit in superiora loca vaporem, et ita, si qui in is locis, qui sunt supra, fontes dulcis aquae nascuntur, offensi eo vapore effervescent inter venas et ita profluunt incorrupto sapore.

...Hot springs arise naturally in the following way. Fire arises underground owing to alum or bitumen or sulphur, and by its heat makes the soil above it to glow. It further sends a warm vapour to the surface of the ground, and whatever springs of sweet water rise in such places, meeting this vapour they surge further between the cracks and flow without damage to their flavour. (trans. F. Granger)

Vitruvius 8.3.2

Sunt etiam odore et sapore non bono frigidi fontes, qui ab inferioribus locis penitus orti per loca ardentia transeunt et ab eo per longum spatium terrae sapore odore coloreque corrupto, uti in

Tiburtina via flumen Albula et in Ardeatino fontes frigidi eodem odore, qui sulphurati dicuntur, et reliquis locis similibus. Hi autem, cum sunt frigidi, ideo videntur aspectu fervere, quod, cum in ardentem locum alte penitus inciderunt, umore et igni inter se congruentibus offensa vehementi fragore validos recipiunt in se spiritus, et ita inflati vi venti cocti bullientes crebre per fontes egrediuntur. Ex his autem qui non sunt aperti, sed a saxis continentur, per angustas venas vehementia spiritus extruduntur ad summos grumorum tumulos.

There are also cold springs not of pleasant smell or taste, which, rising far below, pass through hot soil, and thereupon running a long distance are chilled and reach the surface with damage to their flavour; such as the river Albula on the Via Tiburtina and the cold springs near Ardea, with the same smell, and called sulphur springs, and in other like places. Now these springs, being cold, have the appearance of bubbling, because when, deep down, they come upon a hot place, the fire and water meet; and because of the collision, the springs take up with a loud noise the violent currents of air. They are thus forced by the power of wind driven into them, to issue with much bubbling through the fountains.But those which have no outlet and are contained by rocks, are driven forth through narrow passages by the vehemence of the air-currents to the tops of hillocks. (trans. F. Granger)

Vitruvius 8.3.4

Omnis autem aqua calida ideo quod est medicamentosa, quod in pravis rebus percocta aliam virtutem recipit ad usum. Namque sulphurosi fontes nervorum labores reficiunt percalefaciendo exurendoque caloribus e corporibus umores vitiosos. Aluminosi autem, cum dissoluta membra corporum paralysi aut aliqua vi morbi receperunt, fovendo per patentes venas refrigerationem contraria caloris vi reficiunt, et hoc continenter restituuntur in antiquam membrorum curationem. Bituminosi autem interioris corporis vitia potionibus purgando solent mederi.

As to the curative power of hot springs, the reason is that the water being throughly heated in vitiated soils, takes up an additional and useful quality. For sulphur springs refresh muscular weakness by heating and burning poisonous humours from the body. Alum springs affect parts of the body which are dissolved by paralysis or some stroke of disease; they warm though the open pores and overcome the cold by the opposing power of the heat and thus forthwith the diseased parts are restored to their ancient health. Bitumen springs furnish draughts which purge and heal interior defects. (trans. F. Granger)

Vitruvius 8.3.5

Est autem aquae frigidae genus nitrosum, uti Pennae Vestinae, Cutiliis aliisque locis similibus, quae potionibus depurgat per alvumque transeundo etiam strumarum minuit tumores.

There is an alkaline sort of cold spring, as at Penne and Cutili and other like places, which when taken, purges, and passing through the intestines, also lessens scrofulous tumours. (trans. F. Granger)

Vitruvius 8.3.17-18

Item sunt nonnullae acidae venae fontium, uti Lyncesto et in Italia Velino, Campania Teano aliisque locis pluribus, quae hanc habent virtutem, ut calculos, in vesicis qui nascuntur in corporibus hominum, potionibus discutiant. 18. Fieri autem hoc naturaliter ideo videtur, quod acer et acidus sucus subest in ea terra, per quam egredientes venae intinguntur acritudine, et ita, cum in corpus inierunt, dissipant quae ex aquarum subsidentia in corporibus et concrescentia offenderunt.

There are also some acid springs, as in Lyncestis and in Italy at Velia, at Teanum in Campania and many other places, which have this property that, when they are drunk, they dissolve the stones which form in the human bladder. 18. This seems to happen by nature, because a sharp and acid juice is present in the soil, and when currents of water pass out of it, they are tinctured with acidity. Hence when they enter the body, they disperse what they meet as the water settles and solidifies in the body. (trans. F. Granger)